

*Cur*

Issued Every Month

For Free Distribution to Users  
of Machine Tools

**HITCHCOCK'S  
MACHINE  
TOOL LIST**

A Reference Book for Buyers  
of Iron Working Machinery

Published by  
**A. H. Hitchcock**  
1220-1235 Caxton Building  
Chicago

**Whitcomb  
No. 1  
Hand  
Punch**



**Five Sizes from  $\frac{1}{8}$  in. in  $\frac{1}{8}$  in. steel to  $\frac{1}{2}$  in. in  $\frac{1}{2}$  in. steel**

Bodies are of semi-steel, cast from a special furnace in our own foundry, and are from two to three times as strong as the best cast iron. The working parts are all of equally high grade material, machined and fitted with great precision, making them equal in construction to high grade machine tools. The punch, which is held in a socket at the lower end of the slide, is actuated by an eccentric shaft and pitman, and is at once easy-working and reliable.

*This New Shear and Punch Department  
has been added to our regular line of*

## ***Lathes and Planers***

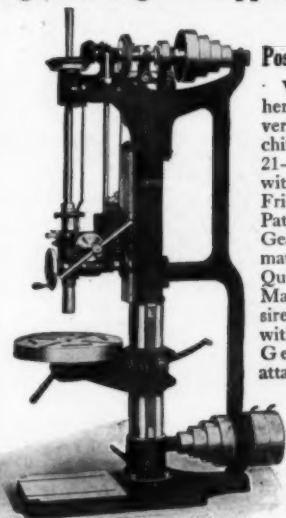
Glad to Have Your Inquiries

**Whitcomb-Blaisdell Machine Tool Co.  
Worcester, Mass.**

# **The Cincinnati**

## **Heavy Pattern Sliding Head**

### **Upright Drilling and Tapping Machines**



**With Patent**

**Positive Geared Feed**

We illustrate herewith one of our very latest machines, namely, our 21-inch Drill, fitted with Sliding Head, Friction Back Gear, Patent Positive Geared Feed, Automatic Stop and Quick return. This Machine can, if desired, be supplied with our Patent Geared Tapping attachment, Square

Table, Motor Drive, either belted or geared, arranged in gangs, or furnished with drilling plates, drill chucks, or vises, as

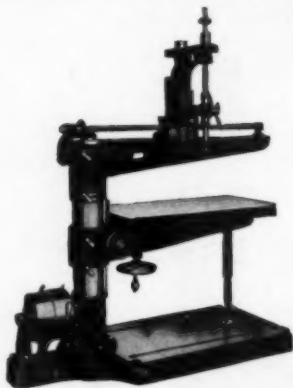
may be called for. These machines range in sizes from 20 to 42-inch, and are made in two distinct styles, one for the use of the ordinary drill, the other strictly for high speed drilling purposes.

*The 1912 catalogue is ready for distribution*

**The Cincinnati Bickford Tool Co.**  
**Oakley, Cincinnati, Ohio**

## It Will Reduce Your Costs

Our Sensitive Radial Drilling Machine is Particularly  
Economical for Small Holes in Large Work



**THE T. & F. RADIAL** was designed especially for manufacturers, but is of such adaptability that it makes good in any line where a tool of this type can be used. Its capacity is far beyond that of an ordinary radial, because small drills can be run at their most efficient cutting speed.

Automatic power feed, lever feed, high speed sensitive or tapping heads may be used, either singly or in combination. Three spindle speeds; positive, silent chain and gear drive. Drills holes up to  $\frac{3}{4}$ -inch.

*Get the full how-and-why, and see where this fast, accurate tool would reduce drilling costs on your work. Write*

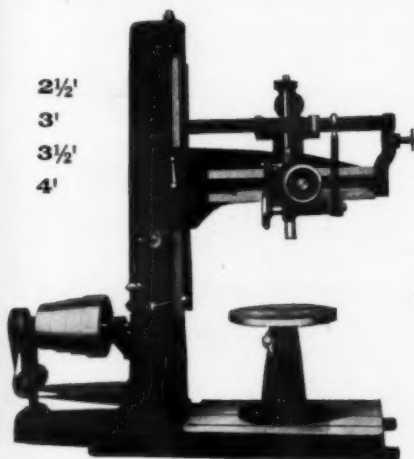
**The Taylor & Fenn Company**  
Hartford, Conn.



ts

An All-Belt Drive  
**Speedy Sensitive Radial**

Lower Driving Belt, 3-in. Wide  
Head Belt, 2½-in. Wide



For Twist Drills ¼ to 1-in. and Tapping to ¾-in.

A UNIVERSAL small-hole drilling machine that is practically noiseless and equally sensitive for drilling or tapping.

IT DRIVES a ½-in. high-speed drill, at 900 r. p. m., through 2-in. cast iron in five seconds; other work in proportion. Write for circular, or for our

*Illustrated Catalog, showing different types of Radials*

**The William E. Gang Co.**

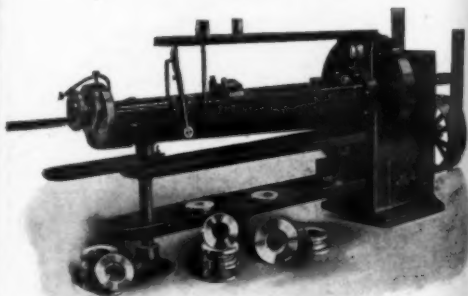
Cincinnati, Ohio

ny

# No Fastening of Work

is necessary, no matter whether you are broaching one or several pieces simultaneously on the

## Lapointe Broaching Machine



### Our New No. 4

is the embodiment of the highest type of mechanical design in Broaching Machines.

**The Lapointe Machine Tool Company**  
Hudson, Mass.

# It's An Electric Welder!

Takes the Place of Riveting



**Over 20,000 Welds Per Day**  
are being made on the articles shown.

**50 to 80% Cheaper than Riveting**  
And it's a stronger and better job.

This is only one type of welder; we make over 60 kinds—Spot Welders and Butt Welders. Our new 32-page Bulletin tells about them. *It's free*—just your name and address gets it. And a welded sample if you want it.

*No Lease      No License      No Royalty*

**Toledo Electric Welder Co.**

Station A, Cincinnati, Ohio



## Floor Operated Electric Traveling Cranes

do not require an operator in constant attendance and are frequently as well or better adapted for handling material than the more expensive cab operated.

We make all types of overhead cranes and hoists.

**The Euclid Crane & Hoist Company**  
Euclid, Ohio

## Electric Hoists Traveling Cranes



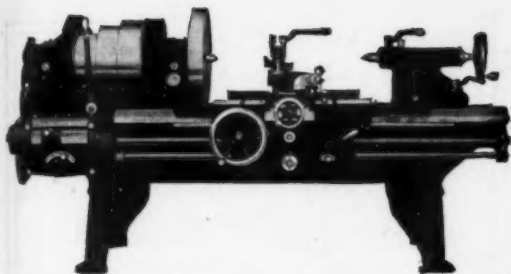
of all types  
for  
all purposes

**I Beam Track Systems  
and Trolleys**

*Write for prices*

**Victor R. Browning & Co.**

542 Rockefeller Bldg.  
Cleveland, Ohio



## **LeBlond Headstock Characteristics**

### ***An Indestructible Spindle Bearing***

Hardened steel spindle running in a special close grained cast iron box, cast integral with the headstock. Oiling facilities perfect. Spindle made from 50 p. carbon crucible steel bar. *Frictional Coefficient Negligible.*

### ***Three Step Cone***

18 spindle speeds—High Belt speeds, exceptionally large cone diameter—meaning *Higher Driving Torque—Greater Driving Power.*

### ***Double Friction Back Gears***

Change from the high to low back gear ratios under cut. Friction automatic in adjustment. Engaged from the front of lathe. *Reduced Non-productive Movements.*

*An investigation is in order*

**The R. K. LeBlond M. T. Co.**  
Cincinnati, Ohio

## Fay & Scott Planer Centers

Improved with Index of Wide Range



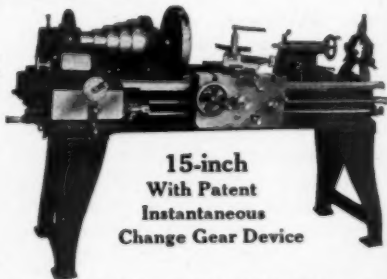
Three Sizes, to Swing 13, 20 and 36 Inches

WE HAVE SPARED NOTHING to give these centers supreme accuracy, convenience and durability. The improved index not only gives an extra wide range of divisions, but the plates being cut through like a gear tooth, allows the use of much stronger form of pin than is possible with a drilled index. Both the work and the index can be quickly disengaged. Reliable for any work which must be carried on centers for planing or milling. Also special index plates for your particular requirements.

Write us your needs today

FAY & SCOTT, - DEXTER, ME.

## Problems



15-inch  
With Patent  
Instantaneous  
Change Gear Device

HOW we can offer high-grade 15-in. and 16-in. lathes at such reasonable prices is *our problem*. Can you duplicate them in quality—especially at the prices? That's *your problem*. Write for facts and figures.

Von Wyck Machine Tool Co., Cincinnati, Ohio

**Just Completed**

**OUR FIRST  
16 Inch Lathe**

---

*and it is a Bird*

Heavy, durable,  
strong, simple  
and accurate

**All Steel Gears**

*Why*—it has every-  
thing in the country  
beaten at anywhere  
near the price.

*Yes*—we'll send you  
full particulars in a  
short while.

*Join the Cisco Colony*

**The Cincinnati Iron and Steel Co.**

Cincinnati, Ohio



36-in., Triple Geared

## We Are Looking for Trouble

Submit your mechanical troubles or shop problems to us. Our Mechanical Engineering Department may be able to help you.

# New Haven Modern High-Power Lathes Solve Many a Lathe Problem

IN COARSE THREAD CUTTING, for instance. By driving the work through the back gears while still driving the train of feed gears from the belt cone, the ratio of the back gears is introduced, permitting us to use *medium sized change gears*. With a back gear ratio of, say, 15 to 1, we could cut a thread of one turn in 5 inches *with the same change gears* required to cut three threads per inch. This is only one of the many valuable New Haven features you will be glad to know about. *Will you write?*

18 to 65-in. swing, belt or motor drive, single or double back gear—which?

**New Haven Manufacturing Co., - New Haven, Conn.**

has low  
notable  
matic  
ments  
upon re

The

Ch  
24

Quick  
Combe

Just  
and in  
the





## Champion Lathes

Install one now and watch it take care of every job within its range. Just the lathe for general shop work. It has all the practical conveniences and is easily handled.

Get our Catalogue of 10, 12, 14, 16 and 18-inch Engine Lathes, Quick Change or New Standard Pattern, all attachments, and Motor or Countershaft Drive.

**Champion Tool Works Co.**

2426 Spring Grove Ave., Cincinnati, Ohio, U. S. A.



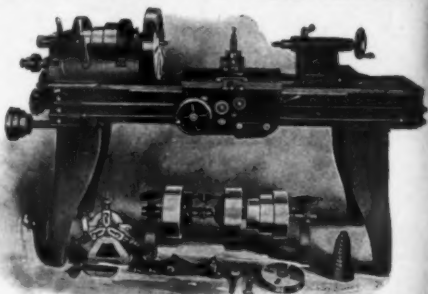
## Efficiency of Cincinnati Lathes

has long been established. Recent improvements make them more notable. All have Double Wall Apron, Chasing Dial, Automatic stop and Cabinet leg. Supply them with any attachments, and lengths of bed. Further details or our literature sent upon request.

**The Cincinnati Lathe & Tool Co.**

Oakley, Cincinnati, Ohio

# Monarch Lathes

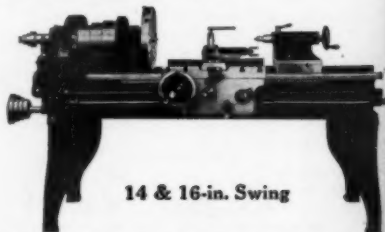


14-16-18-inch Single and Double Back Gear.  
Superior quality at moderate prices.

*Circular by return mail*

**Monarch Machine Co., Sidney, O.**

## So E-A-S-Y

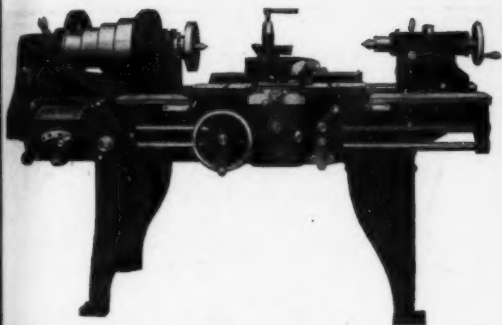


**14 & 16-in. Swing**

CONOVER-OVERKAMP LATHES are so strong, simple and accurate that even the less experienced operators find them easy to handle.

*Easy to operate, easy to buy. For particulars, write*

**The Conover-Overkamp Machine & Tool Co.**  
840 Germantown St., Dayton, Ohio, U. S. A.



## The New MORRIS Lathe

Is a LATHE, designed and built for accurate work, and is the result of many years of practical experience.

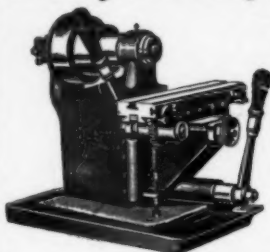
S

O.

strong,  
operation

write  
Co.  
A.

## It Pays to Buy Our Kind



You will find this **Bench Miller** as represented. It not only looks well on paper but it acts well when set up for business, and will save you money, especially on those light cuts.

*Send for Circular*

**The Carter & Hakes Co.**  
West Winsted, Conn., U. S. A.

AGENTS—Marshall & Huschart Mchry. Co., Chicago, St. Louis, Indianapolis; Motch & Merryweather Mchry. Co., Cleveland, Detroit, Cincinnati, Pittsburg.



## "Whitney" 20-Inch Water Tool Grinder

No pump, piping or packed joints to get out of order and leak.

Inside of hood is arranged to catch all water, and keep it from boxes and spindle.

Emery wheel collars are dovetailed, and fitted with balancing device.

Spindle boxes are self-oiling.

Spindle is ground.

Water pan, inside of base, supplies water to the wheel by means of lever, rack and pinion.

Water pan can be easily removed for cleaning.

Machine is simple and cannot get out of order.

Spring lever on side of machine engages with teeth on segment, so that the amount of water supplied to the wheel may be graduated to cover all requirements.

It is impossible for water to escape from pan to the floor.

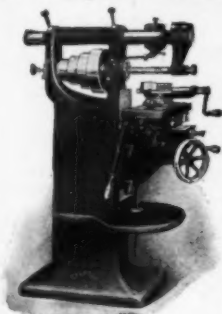
### High Grade—Low Cost

*Catalog No. 10 Gives Full Particulars*

## The Whitney Manufacturing Co., Hartford, Conn.

Manufacturers of Hand Millers, High Grade Driving Chains, Water  
Tool Grinders, "The Woodruff System of Keying," Presto  
Chucks and Friction Tapping Devices.

## A "Steptoe" Hand Milling Machine



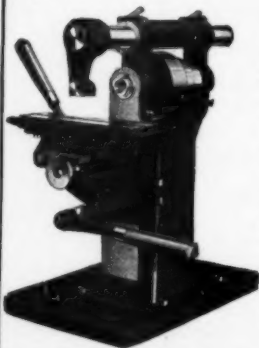
will do your small parts quicker than they can be done on any other machine, and do them accurately. This machine is especially adapted to automobile garages, technical schools, typewriter, gun, sewing machine and cash register factories and shops where keyseating shafts is necessary.

We manufacture these machines with screw and lever feed to the knee, or power, screw, or hand feed to the table.

**The John Steptoe Shaper Co.**

Station B, Cincinnati, Ohio

## Burke's Bench Miller



### A Seasoned Tool

The tool to buy if you want extreme accuracy and permanent alignment five years hence as well as now. In making this miller the greatest care is taken thoroughly to season all castings both before and after machining. We carry these frames and parts from six to eight months after work begins on them before the final finishing is done. The result is a tool that is accurate and will stay accurate as long as you use it. For precision work it has no equal.

Longitudinal feed, 4 in.;  
transverse feed,  $3\frac{1}{4}$  in.; vertical  
motion of knee  $8\frac{1}{2}$  in.;  
table surface,  $3\frac{1}{2}$  x 12 in.

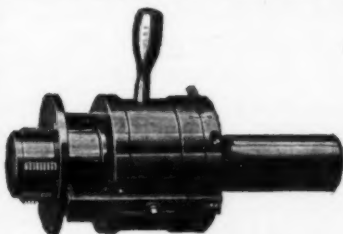
**Burke Mche. Tool Co.**  
Conneaut, Ohio

# Don't Back Out!

The backing out of solid taps wastes time, injures the cutting edges of the tap, and often strips or destroys the thread.

There is no better method of tapping threads, either straight or standard pipe sizes, than the use of the

## Geometric Adjustable Collapsing Taps



Fitted for operation on your Drill Press, Screw Machine, or Turret Lathe.

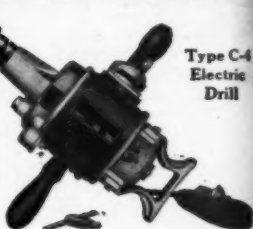
Adapted for tapping any line of Screw Threads of 1 in. or larger diameter.

*Our Collapsing Tap Catalogue will interest you*

**The Geometric Tool Company**  
New Haven, Conn.

## "Ideal" Portable Electric Drills

Automatically adjust their speed to size of drill used, as advocated by manufacturers of twist drills—in other words, the ideal speed for each size drill under load. They run sparkless and do not overheat.



Type C-4  
Electric  
Drill

Write for Catalog, showing our full line of Electric Drills and Grinders, also describing our **VARIABLE SPEED ELECTRIC SCREWDRIVER**, which does the work of six men.

**The Smith Electric Tool Co.**  
Cincinnati, Ohio

## High Efficiency



from men,  
machines and  
organization  
is gained by  
applying

## Durant Counters

to counting and measuring product. Five models—forty styles—with which to meet your requirements. Punch presses, screw machines and conveyors need them particularly.

*Sent on 30 days' trial. Ask for catalog No. 19*

**The W. N. Durant Company**  
Milwaukee, Wis.

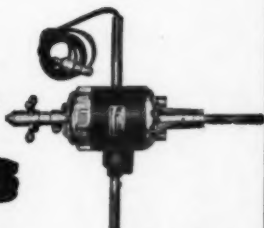




## Electric Air Cooled Drills Are Best by Test

Are You Still Paying  
two or three prices  
for a job just because  
you have always done  
so

?



The fact that the U. S. Government tests prove they are superior in every respect should be convincing evidence to all users of this type of tool.

### Aside From This

there's the added evidence of thousands of users all over the United States. Would they use them if they were not the best? Hardly.

**Want a Catalogue? A Postal will bring it.**

We use aluminum for Casing on all Drills to cut down weight. Power from any Lamp Socket.

**SENT ON TRIAL ANYWHERE**

*Made for alternating or direct current  
Just attach it to your nearest lamp socket*

**The United States Electrical Tool Co.  
Cincinnati, Ohio**

# Here You Are

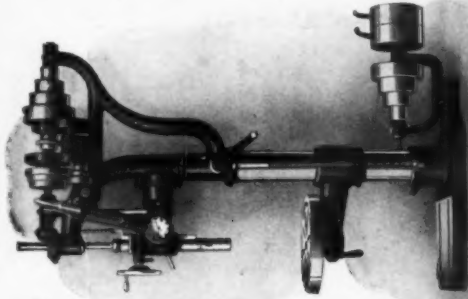
**A Strictly High-Grade 20-in. Vertical Drilling Machine with Back Gears, Power Feed and Automatic Stop, at price of \$85.00, F. O. B. Kokomo, Indiana. Weight, 800 lbs. Capacity, 1 1/2-in. in Cast Iron, 1 1/4-in. in Steel.**

Spindle is made of steel, ground, has drift slot through nose, ball bearing thrust, and pair of jamb nuts for adjustment, and is provided with quick return operated by steel handle at left of machine.

The head is stationary, is cast separate, is tongue and grooved to column and securely bolted, and may be adjusted to take up the wear of the spindle.

Back gearing is very powerful, easy of adjustment, and the power feed is very efficient. We drive from top shaft over large diameter feed cone to small diameter feed cone, then through two sets of machine with wheel and lever feed, or in any combination.

The workmanship and materials throughout are of the highest grade. All shafts, studs, bolts, etc., also the rack and pinions, are made of steel. All gears are cut from the solid and are covered with guards to prevent accidents.



drive from top ma...  
small diameter feed cone, then through two sets of  
machine with wheel and lever feed, or in any combination.

The workmanship and materials throughout are of the highest grade. All shafts, studs, bolts, etc., also the rack and pinions, are made of steel. All gears are cut from the solid and are covered with guards to prevent accidents.

Each machine is thoroughly tested, and at the same time the hole in the table arm is bored by the drill press itself, by the use of a boring bar, which brings the table absolutely true.

We guarantee the above machine to be the best value in Vertical Drilling Machinery ever offered to the trade. We will ship to any responsible concern in U. S. on 30 days' approval, with understanding that machine can be returned at our expense if our claims are not substantiated by trial and inspection.

*You may wire your order at our expense*

## **Superior Machine Tool Company**

**Kokomo, Indiana, U. S. A.**

**Cable Address—KOKODRILL—U. S. A.    Codes—LIEBER'S—A. B. C.—WESTERN UNION**

# The Right Drills == at == The Right Price

**Aurora Extra Heavy 14 to 44-Inch**

It's the old story of quality and price.

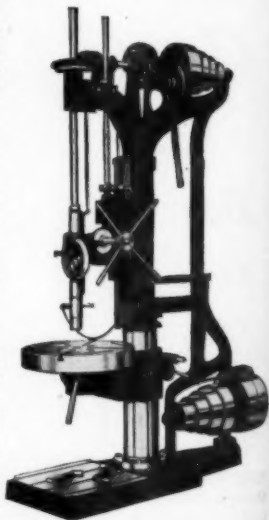
You don't expect something for nothing; but you **do** want the quality, and you **don't** want to pay a fancy price for it.

Aurora Drills are **right** in both **quality** and **price**.

Of extra heavy construction, they are built by skilled workmen, of the best materials, and are equipped throughout for the most exacting requirements.

Belt or motor drive.

Their price is surprisingly low for their quality, because our overhead charges are unusually light, and we have equipped our shop with special labor-saving machinery that produces good tools at a minimum cost of manufacture.



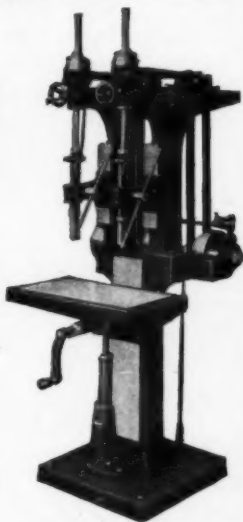
**That's Where You Win**

*Write for complete description and price*

**The Aurora Tool Works**  
Aurora, Indiana

**If You Want  
Greater Production  
At Reduced Cost**

*The*  
**Avey**  
*Ball*  
*Bearing*  
*Drilling*  
*Machine*



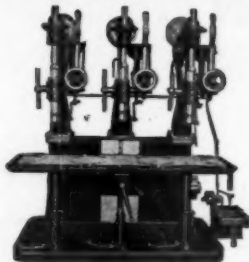
*Is what you need*

With Greater Driving Power, Higher Speed, More Range and Less Loss of Time in Adjusting, you will find that your labor expense will be cut in two.

*An hour of comparison will save you many hours  
of labor in the shop.*

**The Cincinnati Pulley Machinery Co.**  
**Cincinnati, Ohio**

# Rockford Gangs



They not only drill, but they bore, ream, tap and face without removing work from jig.

*Write for descriptive matter*

**Rockford Drilling Machine Company**  
Rockford, Ill., U. S. A.

# Silver's 20" Drills

**Eight Styles**

**LEVER FEED**

**LEVER and WHEEL FEED**

**POWER FEED and Automatic Stop**

**POWER FEED with Back Gears and Automatic Stop**

**Round or Square Base**

*Send for catalog*



Fig.  
858

**The Silver Mfg. Co.,** 385 Broadway  
SALEM, OHIO

**\$55.00**

F.O.B. Kokomo, Ind.

**SUPERIOR**  
UPRIGHT  
DRILL

**\$55.00**

F.O.B. Kokomo, Ind.

## 20" Square Base, Wheel & Lever Feed

We have on hand for immediate delivery a number of Superior 20" Square Base, wheel and lever feed upright drill presses as illustrated, that have always sold at price of \$65.00 f.o.b. Kokomo, Ind.

We are redesigning this machine, making some changes in our patterns in order to build the new machine with power feed, and back gears, and do not care to mix our stock by having on hand the same size machine in two different designs.

These machines are high grade, carefully built and equal to other machines of the same size, and are guaranteed by us the same as if sold at our regular price.

We will ship to concerns satisfactorily rated on regular terms of 30 days net; and to those that send cash with order we allow an extra 2%. We agree to refund your money if not entirely satisfied.

If you can use one of these machines you better order at once, as our supply is limited.

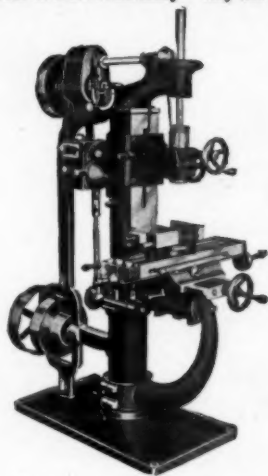
*Handsome catalogue illustrating our complete line,  
20 to 36 inch inclusive, upon request.*

**Superior Machine Tool Co.**  
Kokomo, Indiana, U. S. A.



# Makes Hard Machining Easy

The No. 2 Knight is saving time, money and nerves in hundreds of tool rooms today—why not in yours?



**A**LL KINDS of difficult operations on dies, jigs, metal patterns, moulds, etc., are greatly facilitated by the use of this fast milling and drilling machine. Some shops save as much as 50 per cent of time on expensive tool room work.

Just remember—the Knight machines enable you to mill, bore and drill at almost any angle without resetting the work.

*Send your address and we'll send full details*

**W. B. Knight Machinery Co.**  
St. Louis, Mo.

Nos. 1 & 1½ are Lighter Machines of Equal Convenience



*Look Here, Please!*

## **A Sensitive Drill With Six Spindle Speeds**

from 600 to 2,400, with ample power for  $\frac{1}{2}$ -inch drills  
and plenty of speed for the smallest drills.



---

**Net  
Price,  
Only  
\$50.**

---

*If your Dealer doesn't have them, write us*

**Reed Drill Company**  
43 Hammond St., Worcester, Mass.



Quality

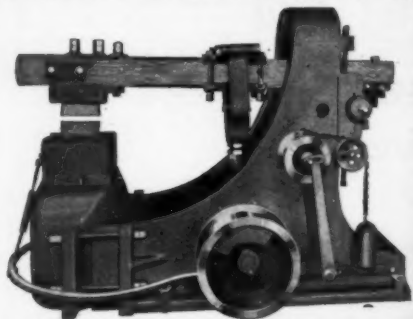
# Quality

This is the first consideration in the design and manufacture of Henry & Wright Drilling Machines. They cost more, but they produce more, wear longer and are a better investment than others, and the power expense for running them is so much less than for old style machines that this saving alone will in many cases amount to more than the cost of the machines in a very short time.

Send us your problems, and let us send you a chart of feeds and speeds, costing thousands of dollars to produce, which we are distributing free on request.

**The Henry & Wright Mfg. Co.**  
Hartford, Conn.

**"Rochester" Helve Hammer** Six Sizes  
Two Types



**THE WEST TIRE SETTER COMPANY**  
Rochester, New York



**Beaudry Champion  
Power Hammers**

Occupy small floor space;  
will handle varying thick-  
nesses of stock without re-  
adjusting; quick and direct  
acting and always under  
perfect control.

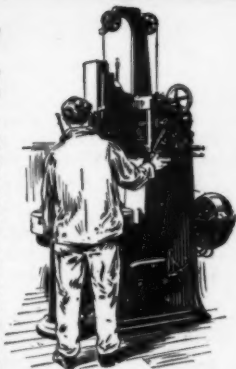
*New Catalogue just out  
Ask for it*

**Beaudry & Co., Inc.**  
Oliver Bldg. Boston, Mass.

# MOTOR DRIVE FOR MACHINE TOOLS

## Save Time by Quick Stopping

On many machine tools—especially those having heavy moving parts—much time can be saved by quick stopping. This is accomplished very simply with the Reliance Adjustable Speed Motor by means of the automatic starter with dynamic braking feature. As in the case of starting, all conditions are automatically taken care of so that quick stopping is effected without harmful strains on the motor or driven machine. This simple and positive method of stopping removes the necessity of a clutch, so that the motor is never running idle, thus unnecessarily wasting power.



On the machine illustrated, push button stations are installed on both sides, so that they are within easy reach of the operator regardless of his position about the machine. When the "stop" button is pressed the table is brought to rest quickly—there is no time wasted waiting for the machine to slow down. Figure in dollars and cents what this time and power saving feature would mean on all the machines in your shops, and remember that this is only one advantage offered by Reliance Motor Drive.

*We shall be glad to send you our Folder 10-L, showing interesting applications of Reliance Motors and automatic starting control*

**RELIANCE ELECTRIC & ENGINEERING CO.**  
1050 IVANHOE RD • CLEVELAND, O.

## Scientific Hydraulic Bulldozer



This machine can be used for bending or straightening pipe, rods, bars, etc.; for all kinds of stoving or shaping, for light or heavy welding, and many other purposes. Long strokes or short strokes can be made with it; also quick or slow movements.

Made by  
**Lourie Manufacturing Co.**  
 Springfield, Illinois  
 Manufacturers of Hydraulic Machinery

## At Least \$18.00 a Week SAVED



where one boy operating one *Elastic Rotary Blow Riveting Machine* can do the work of four boys.

How long will it take to pay for the machine at this rate? And the work is **FINISHED BETTER** than is possible by any other method—*every blow* in the right place and *every head* smoothly finished.

**The F. B. Shuster Co.**  
 New Haven, Conn.

Formerly John Adt & Son. Established 1886

Wire Formers for Staples, Cotter Pins, Buckle Tongues, etc., Sprus Cutters, Foot Presses.

# RIVETING

Noiselessly

Rapidly



A boy or girl—inexperienced—can do *perfect* tight or loose riveting—a rivethead a second.

The Grant is absolutely noiseless—costs practically nothing for repairs.

Uniformity is a feature—no hammer marks or upset shanks.

Rivets are *spun* on—no hammering—giving a superior finish and perfection to the work.

We'd be glad to rivet a sample for you—you'll see just how good work the Grant can do.

**The Grant Mfg. & Machine Co.**

C. E. Station  
Bridgeport, Conn.,  
U. S. A.

AGENTS—Strong, Carhse & Hammond Co., Cleveland, Ohio, and Detroit, Mich. Thos. Crowther & Co., 170 Oliver St., Boston, Mass. Marshall & Huschart Machinery Co., 45 So. Capitol Ave., Indianapolis, Ind. Baird Machinery Co., Pittsburg, Pa. The W. E. Shipley Machinery Co., Bourse Building, Philadelphia, Pa.

## "Everybody's Doing It"

Installing the "Handiest Tool in the Shop" Portable Floor Crane and Hoist, because this "**Samson**" saves



Muscle  
Time  
Money  
Accidents  
Labor  
and  
Drudgery

— "That's All"

If you are tired of paying ten prices for your lifting and conveying, write to us for quotations and literature on this "Handiest Tool." You will learn **facts** that will surprise **YOU**.

*Write today*

**The Canton Foundry & Mch. Co.**  
Canton, Ohio



## THE TRUTH

about

# "Detroit" Drills Reamers and Cutters

The very best steel, correct design, supplemented by intelligent workmanship, exact heat treatment, an intimate knowledge of temperature requirements and every modern facility for obtaining them, insure Strength, Durability and a High Cutting Efficiency in "Detroit" Tools.

## THE PROOF

"Detroit" Drills operating in a large and well-known plant are today drilling 1-in. holes in drop forged, .40 carbon steel, running at 260 RPM and at .020 feed, making an average of 190 holes between successive grindings. With ordinary care you can do as well—or better.

Ask your Dealer or write us direct for a few "Detroit" Drills for test. Catalog "J" is yours for the asking.

TRADE



MARK

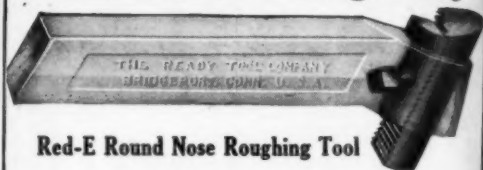
## Detroit Twist Drill Co.

510-522 Fort St., Detroit, Mich.

1926 Wabash Ave., Chicago

30 Church St., New York

## Delivers Full Capacity



### Red-E Round Nose Roughing Tool

gives big results because designed for fast feeds and high speeds. Having the correct cutting contour for heavy duty, this modern roughing tool will bring your lathes up to *full capacity*. The cutter is made of a special high speed steel, treated by the Taylor-White process.

*Four sizes. Write today for catalog and prices.*

**The Ready Tool Company**  
Bridgeport, Conn.



## Are You Tired of Paying Big Bills for High Speed Steel?

### ARMSTRONG TOOL HOLDERS

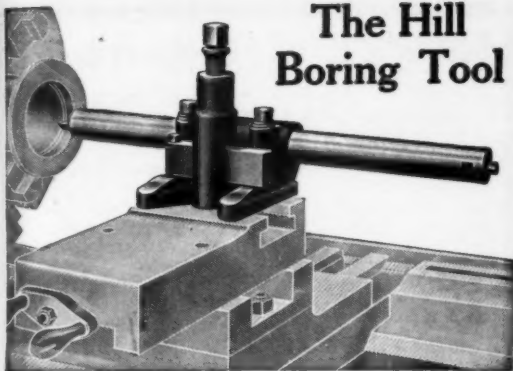
Make 1 lb. of Tool Steel go as far as 10 lbs. in Forged Lathe and Planer Tools.

*Write for catalog—It tells other advantages*

**Armstrong Bros. Tool Co.,** 308 N. Francisco Ave.  
CHICAGO.



## The Hill Boring Tool



### Its Rigidity Insures Good Work

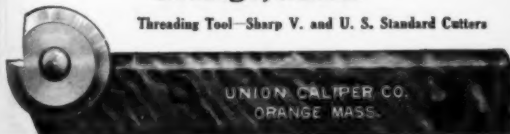
**COLD ROLLED STEEL**—one solid piece of it—constitutes the bar of this tool. It has a square hole broached at right angle at one end, and at an angle at the other.

The holder, which clamps rigidly to the cross slide, is a heavy malleable casting, with steel collar screws to bind the steel bar rigidly. There is no danger of the cutter twisting around and increasing cut, even under heavy stress.

Our catalog gives details of our line of unexcelled Lathe and Planer Tool Holders. A copy is yours for the asking.

**Union Caliper Company**  
**Orange, Mass.**

Threading Tool—Sharp V. and U. S. Standard Cutters

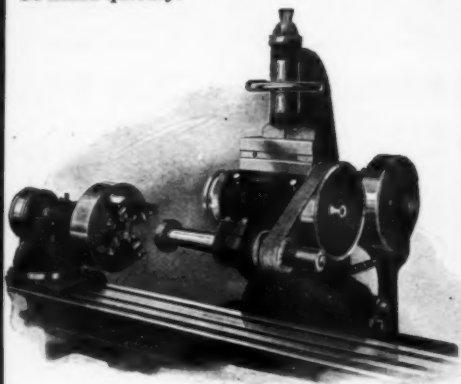


UNION CALIPER CO.  
ORANGE MASS.

# Here's A Grinder That Never Needs Be Idle

Because of its greater range of work—External and Internal, Cylindrical, Surface, Disc, Cutter and Reamer Work of all description can be ground with as much accuracy and rapidity on the Bath Universal grinding machine as on a single purpose machine.

Changes from one operation to another can be made quickly.



*Bath Universal Grinding Machine  
Arranged for Internal Grinding*

## **Bath Grinder Co.**

**75 Walnut St.,**

**Fitchburg, Mass.**



## Finish Two Sides At Once

Double head Gardner Disc Grinders are used for finishing two parallel faces at the same time. The piece is placed between two disc wheels and feed pressure applied by hand or foot lever. Micrometer stop screw regulates amount of stock removed, producing duplicate pieces.

On suitable pieces, we guarantee a Gardner Grinder—over 100 styles and sizes—will give an output 3 to 30 times greater than milling machines, shapers, lathes and planers.

*Green Book—130 pages of disc grinding data*

### **Gardner Machine Company**

*The Disc Grinding Authorities*

**BELOIT,**

**WISCONSIN**

# Buffing Machinery



The Blount buffing and polishing machines are strong and well designed, and are made in six sizes, from the No. 2 to the No. 7.

These machines have long, self-oiling, bab-bitted bearings, with spindles ground to fit. Removable taper point fitted to right hand end of spindle.

Spindles can be furnished with tight and loose pulleys when desired.

*Write for Catalogue*

**Manufactured by**

**J. G. Blount Company**  
**Everett, Mass.**



## ***Constant Speed!*** **The Ransom Patent Speed Controller**

**Keeps the periphery speed constant as an  
emery wheel wears down in diameter**

By its automatic regulation of the 2-to-1 variable speed motor, it insures the same surface speed on wheels of different diameters, whether new or worn.

It raises the grinding efficiency of the small or worn wheel to par, and prevents the speeding of large wheels too fast for safety, insuring maximum production and security at all times.

These machines are made in all sizes.

*Glad to send you Descriptive Bulletin No. 9*

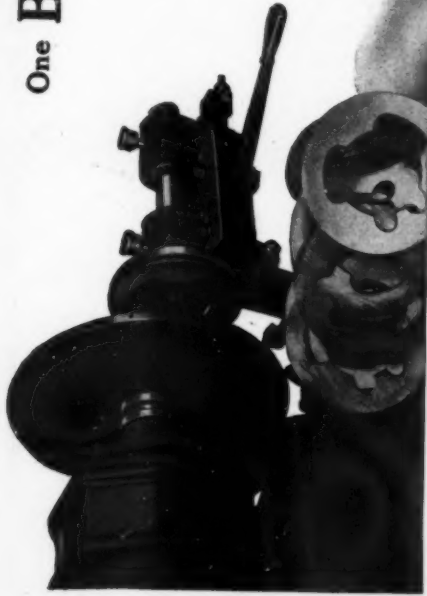
**Ransom Manufacturing Co.**  
**Oshkosh, Wis.**

# One Besly Grinder

with unskilled operator, displaced four specially equipped lathes and reduced cost eighty per cent on bronze discs for planetary transmission.

120 surfaces per hour, from the rough. BESLY GRINDERS are used successfully most everywhere—from Watch Factories to Brick Yards. One of the most useful tools known to machine shop practice.

*Interesting literature mailed on request.*



*Send drawings, sketches or samples of your work and learn how much a BESLY GRINDER will save in your shop.*

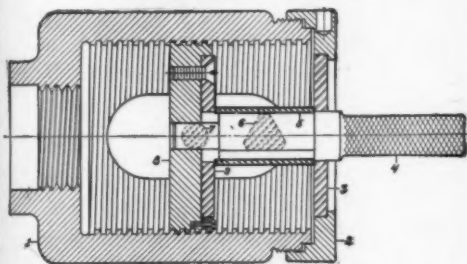
**CHARLES H. BESLY & COMPANY - Chicago, U. S. A.**  
Largest Manufacturers of Disc Grinders in the World



**CHARLES H. BESLY & COMPANY - Chicago, U. S. A.**  
Largest Manufacturers of Disc Grinders in the World

# HINTS On Internal Grinding

How to hold thin bushings  
without distorting them



This device consists of a barrel shaped holder mounted on the work spindle of the grinder. On the front end is a removable cap threaded to the end to clamp the bushings and is removed to take out the work when finished.

The collar at the rear of the bushing is threaded to fit the inside of the holder, and is in this way adjustable for any length of bushing within the capacity of the holder.

The rear collar is moved only when the length of work is changed.

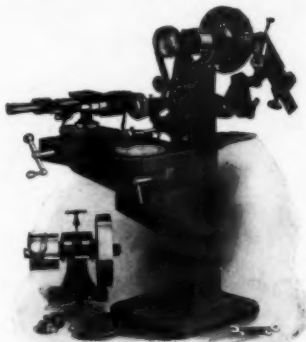
Both the cap and the collar are fitted with simple interchangeable plates easily made.

The rest of this story and lots of others are told in "Practical Hints on Internal Grinding" from which the above is an extract.

*Copies furnished FREE upon request.*

**The Heald Machine Co.**  
6 New Bond St., Worcester, Mass.

## Here Is a New Combination Cutter, Reamer and Drill Grinder



**Style BX.**

For simplicity and accuracy, this machine is in a class by itself. No preliminary adjustment is required for grinding drills. The range of work on cutter and reamer grinder is equal to most of the more expensive machines on the market, and none of the others grinds drills. Drills and cutters can be ground at the same time by two different operators without either interfering with the other.

The price is——. Write and find out and you will be agreeably surprised.

*Complete illustrated circular free.*

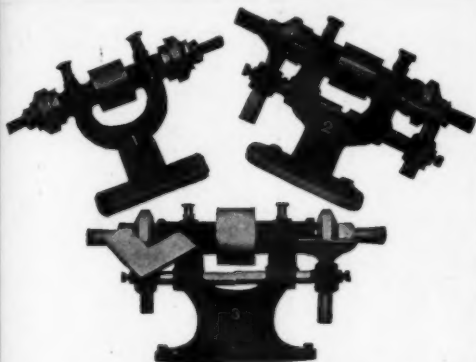
**Wilmarth & Morman Co.**  
575 Canal St., Grand Rapids, Mich.

Cutter,  
r

is in a  
required  
tter and  
expen-  
others  
d at the  
t either

ou will

Co.



## Emery Grinders

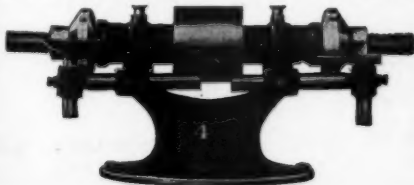
**Better Ones for Your Money**

They look like others, but are different in details of design and construction. Built like machine tools, with the arbors and collars accurately turned and balanced, and properly lubricated and protected against dust. They run easier, last longer and give better service. Made in quantities sufficient to keep down manufacturing costs, and the price. I can interest you in Bench, Column, and Cabinet Grinders, Foot Presses and Bench Tapping Machines. *Write me.*

**E. O. PARTRIDGE**

2047-9 Lake Street,

CHICAGO



# Take the Dust out of Your Factory

In the Simplest, Cheapest, most Satisfactory Way, by Installing  
a Morse "Rarefied" Dust Collector

It is simplest because a partial vacuum draws in the air, and the dust is collected and discharged automatically before the air reaches the fan; there is no cleaning out by hand.

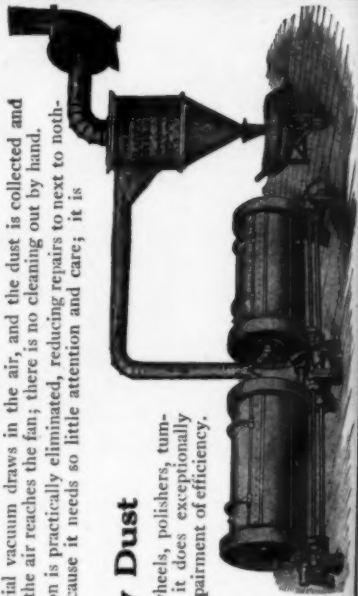
It is cheapest because friction is practically eliminated, reducing repairs to next to nothing. And most satisfactory because it needs so little attention and care; it is naturally always on the job.

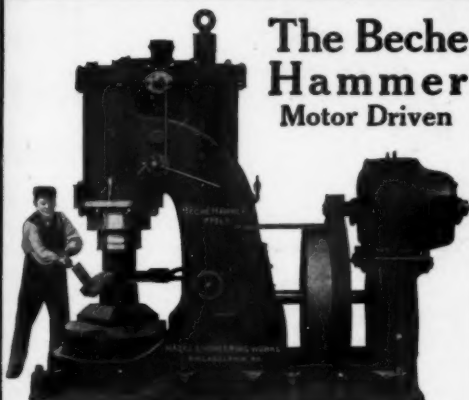
## With Heavy Dust

The kind made by emery wheels, polishers, tumbling mills, sand blasts, etc., it does exceptionally thorough work with the least impairment of efficiency.

*Let us send you our Booklet; the details are convincing.*

**The Knickerbocker Co.,**  
Jackson, Mich.





## The Beche Hammer Motor Driven

**The Heaviest, Most Powerful, Efficient  
and Economical Hammer of Its  
Size on the Market.**

*Hammer and Compressor Combined, No Piston  
Rods, Springs, Straps or Cushions.*

### **Simple—Durable—Reliable**

Powerful, non-bounding, squeezing blow. Positive, flexible control. Long stroke. Variable blows at will. No adjustments. Dies at any angle. Belt drive, no countershaft. Motor drive, geared direct.

#### **Sizes and Normal Capacities of Beche Hammers**

66 lb.	165 lb.	250 lb.	350 lb.	500 lb.	770 lb.
2" dia.	4" dia.	5" dia.	7" dia.	8" dia.	9" dia.

*Write for Catalogue and Prices*

#### **Nazel Engineering & Machine Works**

Sole Builders for United States and Canada  
5th and Luzerne Sts. - - Philadelphia, Pa.

# Take the Dust out of Your Factory

In the Simplest, Cheapest, most Satisfactory Way, by Installing  
a Morse "Rarefied" Dust Collector

It is simplest because a partial vacuum draws in the air, and the dust is collected and discharged automatically before the air reaches the fan; there is no cleaning out by hand.

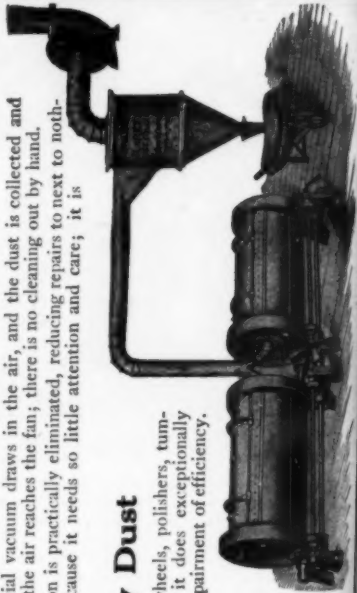
It is cheapest because friction is practically eliminated, reducing repairs to next to nothing. And most satisfactory because it needs so little attention and care; it is naturally always on the job.

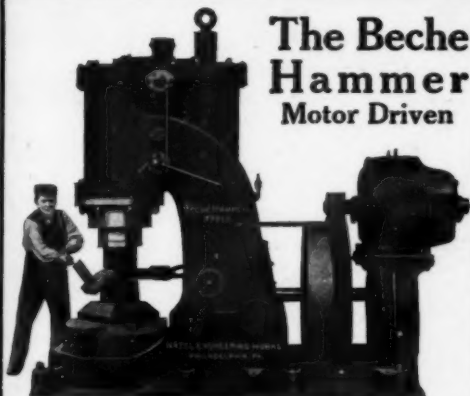
## With Heavy Dust

The kind made by emery wheels, polishers, tumbling mills, sand blasts, etc., it does exceptionally thorough work with the least impairment of efficiency.

*Let us send you our Booklet; the details are convincing.*

**The Knickerbocker Co.,**  
Jackson, Mich.





## The Beche Hammer Motor Driven

**The Heaviest, Most Powerful, Efficient  
and Economical Hammer of Its  
Size on the Market.**

*Hammer and Compressor Combined, No Piston  
Rods, Springs, Straps or Cushions.*

### **Simple—Durable—Reliable**

Powerful, non-bounding, squeezing blow. Positive, flexible control. Long stroke. Variable blows at will. No adjustments. Dies at any angle. Belt drive, no countershaft. Motor drive, geared direct.

#### **Sizes and Normal Capacities of Beche Hammers**

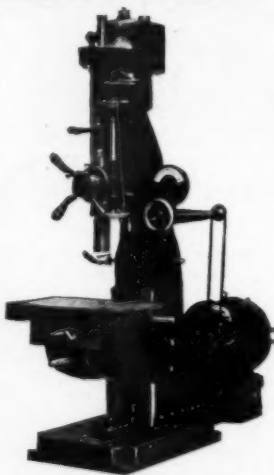
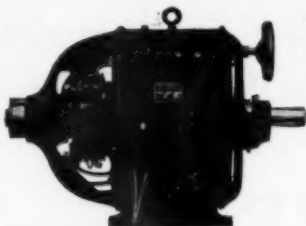
66 lb.	165 lb.	250 lb.	350 lb.	500 lb.	770 lb.
2" dia.	4" dia.	5" dia.	7" dia.	8" dia.	9" dia.

*Write for Catalogue and Prices*

#### **Nazel Engineering & Machine Works**

Sole Builders for United States and Canada

5th and Luzerne Sts. - - Philadelphia, Pa.



Upright drill driven by Reliance Adjustable Speed Motor and equipped with Reliance Speed Dial. With the aid of the dial the speed of the motor can be set to give the proper peripheral speed for the drill to be used.

Note position of hand-wheel for speed control.

## Reliance make you more work

It is a well-known fact that some method must be used to produce uniform results with motors and tools. To say that ordinary boxes, and adjustable motors, result, is the best we can do in not use a method that only a few of running speeds? Some method of the armature shifting. The over ranges as great as to ten to the limit of its capacity to produce the quickest motor any.

## Convenience

The convenience of the speed belt drive will, in itself, other of 5% in the output of any machine. Adjustable Speed Motor, controlled by the operator, giving this speed within the range of the motor so handy and simple, the operator often as the work demands. The machine is run at the speed for

Our Folder No. 10 in detail interesting applications to different



Reliance Electric  
Ivanhoe



# Reliance Adjustable Speed Motors will make your machine tools turn out work faster than any other drive.

It is well-known that, to approach the maximum output on a machine tool, it must be able to produce different speeds to suit various cuts, materials, etc. To say that ordinary methods, such as cone pulleys, gear changes, speed changers, etc., are adjustable motors with electrical controllers **approach** the desired speed is the best we can do in most cases. If speed adjustments are desirable, why not use a method that is fully accurate, one that is not limited to any fixed number of speeds? Such a method is offered in the Reliance Adjustable Speed Motor with its hand-wheel shifting. This motor gives an unlimited number of running speeds, from a crawl to ten. With Reliance Motors you can run each machine of its capacity every minute of the day. You can get the right speed to do any work in the quickest time for any operation on any kind of material with any kind of tool.

## Convenient Speed Control

The convenient speed control offered by motor drive as compared with belt drive will, in itself, with other advantages being considered—result in an increase in the output of any machine tools. Speed changes with the Reliance Adjustable Speed Motor are controlled by the hand-wheel which can be placed conveniently for the operator. Turning this wheel shifts the motor armature, giving any desired speed in the range of the motor—no electrical controller is used. This method is simple and the operator is encouraged to make speed adjustments as needed for the work done. This keeps the output up to the top notch, as the machine is run at the right speed for each operation on all kinds of work.

For Folder 11, in detail about the advantages of Reliance Motors and shows interesting applications to different types of machines. Ask us to send you a copy.

## Reliance Electric & Engineering Co.

14140 Lorain Road, Cleveland, Ohio





## Here is a Babbitt Melter!

In most shops, anything is good enough for babbitting. Old ladles, encrusted melting pots, and a miscellaneous collection of battered pots form the principal part of the equipment.

Discard all this.

Get a Vesuvius Babbitt Melter.

It is economical in gas consumption.

**We can prove it**

*Price No. 1, Capacity 200 lbs., \$25.00*  
*" No. 2, " 50 lbs., \$12.00*

Net F. O. B. Rochester

## The W. P. Davis Machine Co.

Builders of Lathes, Chucking Machines and Keyseaters

Rochester, N. Y.

# Remember When Ordering Cutters

That the high quality of B & S Cutters and the extent of the line have established their reputation for serviceability.

Furthermore, we can supply immediately, cutters to fulfill nearly every practical requirement from stock.

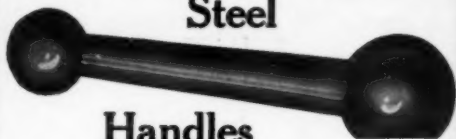
Upon request we will gladly send you our Cutter Catalogue.

**Brown & Sharpe Mfg. Co.**

Providence, R. I., U. S. A.

**B&S**

# Steel



## Handles

For power tools and similar purposes

Accurate, highly finished, complete on receipt, and ready to attach. Manufactured as a specialty, we offer you the result of quantity production, in the way of efficiency and price. Catalog of standard handles with prices and discount on application.

**The Cincinnati Ball Crank Co.**

1245 Plum Street, Cincinnati, Ohio



# STOCKBRIDGE

We can only point the Stockbridge way to increased Shaper Production. Our "1911" Catalog explains, read that, and learn the difference between a Stockbridge Two-Piece Crank and a Regular Crank Shaper. It will save you money.

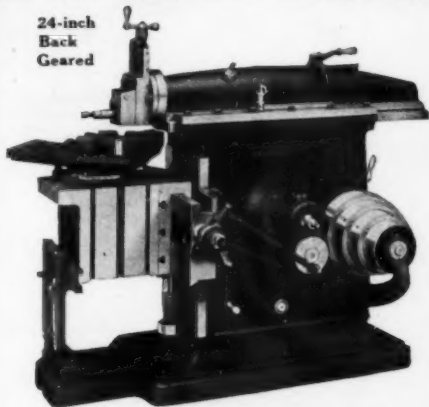
**Stockbridge Machine Co.**

Worcester, Mass.

# The "Queen City"

## The "23 Jeweled Watch" Among Shapers

24-inch  
Back  
Geared



THE ONLY SHAPER BUILDERS who **harden** or **grind** crank-pin or bull-gear hub; or **harden** other important journals (11 of them); or **harden** or **grind** crank-block (3 surfaces), thrust washers (6 of them), feed-pawl and ratchet, tool-plate, etc.; who **ring-oil** the 8 important revolving bearings; who use **sight feed** oilers on ramways, or **screw top** oil cups for crank-block, feeding oil to these important bearings as needed without waste. There's no cutting of bearings and getting stuck; no excess friction, but **great power efficiency**, with accurate, constant, economical service.

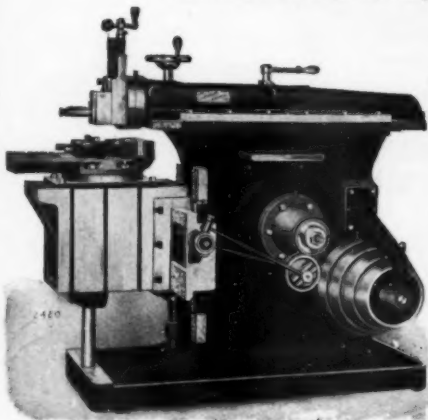
*No Obligation if You Write for Rest of the Story  
With Prices Which are Remarkably Low for Quality.*

**Queen City Machine Tool Co.**  
Cincinnati, Ohio

***Maximum Power***

***Maximum Accuracy***

***Maximum Durability***



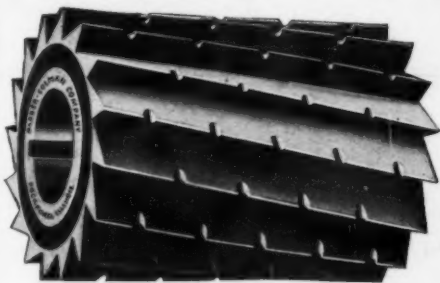
**All these in the "Cincinnati"**

With the greatest power of any shaper of its stroke, modern exactness in construction, and a reserve of strength ample for any emergency, its service value makes it an ideal manufacturing tool. It is produced under conditions which enable us to turn out a thoroughly good machine at a moderate cost, so that the buyer, while receiving the highest value that can be put into a shaper, pays but little more than an inferior substitute would cost. We ask a careful investigation of it, because we know that if made it will demonstrate beyond question the intrinsic and the comparative worth of the machine. The bet-  
bet you know its strength, its capacity and its sturdy endurance, the firmer will be your conviction that it has no equal in its line. That is why we ask you to send for our free shaper book; it gives the why and wherefore.

***A postal request will bring it***

**The Cincinnati Shaper Co.**

**Colerain Ave. & Elam St., CINCINNATI, OHIO**



## **The Right Milling Cutter** *For Your Work*

is the one that gives the most satisfactory service in actual use. That many especially critical users prefer ours, is not a reason why you should do so, but it is one of the best reasons why you should determine by an actual trial whether it is as much better than any other for your purpose as it evidently is for theirs.

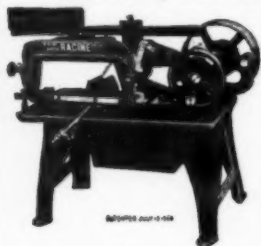
Our broad experience in the production of milling cutters of the highest grade, and the perfection of our manufacturing methods, make such a test extremely worth while.

*We can ship any standard cutter  
from stock; specials to order promptly.*

**Barber-Colman Company**  
Rockford, Illinois

## 30 Days' Trial Will Demonstrate

When we say that a 30 days' trial of the



### Racine High Speed Metal Cutting Machine

will demonstrate its ability to reduce your metal cutting costs, we mean just that.

It will prove that you cannot afford to be without it.

Trial installations have repeatedly proven our contention that for all round, full-fledged, economical metal cutting ability, the RACINE is beyond comparison.

*Say the word today that will start your demonstrating the machine*

### Racine Tool & Machine Company

Racine Junction, Wis., U. S. A.

Eastern Distributors: Simplex Tool & Supply Co., Boston

## Speed and Economy Here

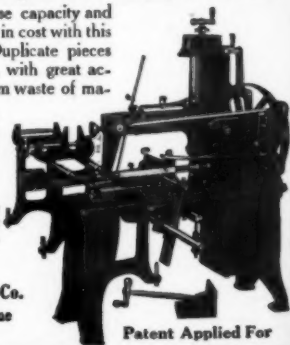
One "Marvel" equals 10 ordinary hack saws

You greatly increase capacity and obtain a big reduction in cost with this high speed saw. Duplicate pieces are cut automatically, with great accuracy and a minimum waste of material. Has an even, draw-cut stroke. A comparison will surprise you.

*Send for descriptive circular of this machine and other Hack Saws, Punches and Shears.*

**Armstrong-Blum Mfg. Co.**

341 N. Francisco Avenue  
Chicago, U. S. A.



Patent Applied For

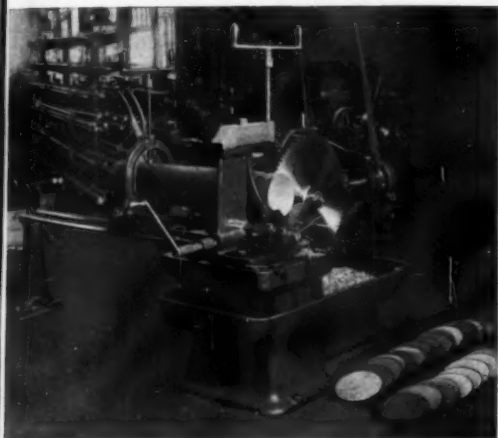


**Only 10 Minutes**

**to cut off**

**8-in. O. H. Machinery Steel**

**10 Seconds to Reset Bar**



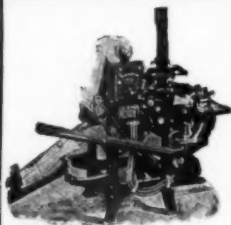
**The Cochrane-Bly 8½-inch Cold Saw**

is shown above cutting discs from an 8-inch bar of open hearth machinery steel, with a maximum variation in thickness of .005 of an inch. Saw blade, 24 in. diameter,  $\frac{3}{16}$  in. thick; average cutting time 10 minutes, average time of resetting the bar for duplicate cut, 10 seconds.

This illustrates how power, convenience, accuracy and speed are combined in the Cochrane-Bly Saws to make an ideal tool for cold cutting. Five sizes, 4 to 8½ in. capacity. Especially interesting to manufacturers seeking to quicken and cheapen their processes. We also make Saw Sharpening Machines and Die Filing Machines—two sizes of each.

*Send for descriptive Folder*

**Cochrane-Bly Company**  
**Rochester, N. Y.**



Mailing & Wrapping Machines,  
Automatic Printing Presses  
as well as a great many other  
Automatic Machines

Use LEIMAN BROS.  
Rotary Positive Pressure  
**BLOWERS**  
AND  
**VACUUM**  
**PUMPS**



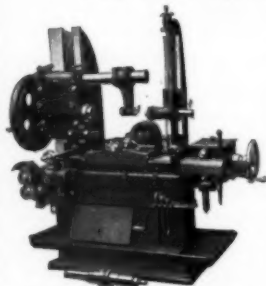
They take up their own wear. Can't  
get out of order. Also used with oil  
and gas appliances. 2 to 338 cu. ft. l  
to 10 lbs. pressure. 1 to 20 in. vacuum.

Blower Catalog No. 26; Vacuum No. 27.

**LEIMAN BROS.** 62R John St.  
NEW YORK

## Newark Gear Cutting Machines

Are Manufacturing Tools



Made in all sizes,  
for all classes of gear  
work.

Entirely automa-  
tic in operation.

Simple in con-  
struction.

Accurate index-  
ing mechanism.

Write for 1912 Catalog

**Newark Gear Cutting Machine Co.**  
70 Union St., Newark, N. J.

# Saving Precious Minutes

That's done by using the  
hack saw blade which lasts  
so long there are no frequent  
changes— isn't it?

And don't you save still  
more time with a blade that  
cuts faster while it *does* last?

You'll find a

## Starrett Hack Saw

adapted to every job. It cuts  
—it lasts. The finest grade  
of steel goes into its make-up.  
An improved way of temper-  
ing leaves it hard and tough—  
it won't shell off—it's abso-  
lutely uniform throughout.

Every one of the keen  
square teeth does its share of  
the cutting. That's why it  
cuts faster and lasts longer.

Send for our Catalog 19HT

**The L. S. Starrett Co.**  
**Athol, Mass.**

New York

London

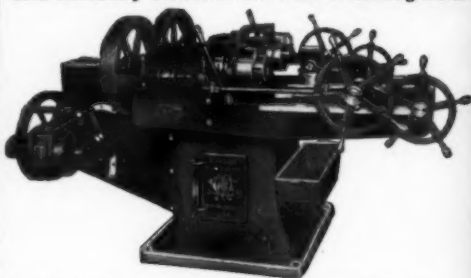
Chicago

42-3



# Double Bolt Cutter The Improved Standard

**A Motor Driven, Quick Change Gear Machine That  
Has Markedly Reduced the Cost of Making Bolts**



**A Real Machine Tool in Construction and Efficiency**

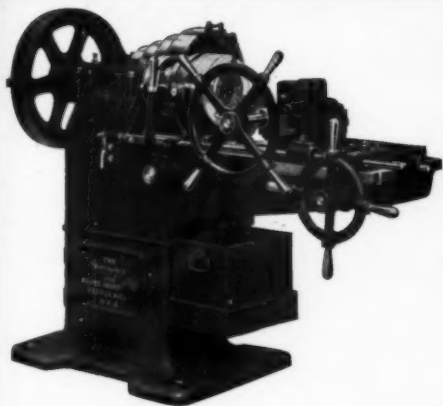
It has the strength and rigidity to stand the severest service, and the accuracy required for exact work, with a capacity that insures a high degree of economy in the cost of its output. Its adjustments, while exceptionally simple and easily made, give the operator such perfect control of the machine that it can be operated at its full capacity without risk of defective work. The micrometer adjustment shows whether cutting over, under or exact size, and is readily set while running. When the length of bolt desired is cut, the head opens automatically to release it.

The success of the "Standard" in government and railroad shops, where the requirements are the hardest, is strong proof of its superior merit as a manufacturing tool of the highest class.

*May We Demonstrate Its Value to You?*

## **Universal Machine Co.**

**Enterprise Street, Bowling Green, Ohio**



## Reliance Bolt Cutters

Built in sizes  $\frac{3}{4}$  inch to 6 inches, Single, Double and Triple, of the most up-to-date design. There is, also, a good reason why the "Reliance" is such a satisfactory machine for accuracy of threads cut, large production and low cost of maintenance, even in the hands of inexperienced labor. A lot of this reason is in the Opening Die Head, and we would like to tell you all about it. Interesting information for the asking.

**The Foote-Burt Co., Makers**  
**Cleveland, Ohio**

# Elastic Wheel Metal Cutting-Off Machine

**For Cutting All Metals  
Quickly, Cheaply, Smoothly**



When equipped with a 12-in. x  $\frac{3}{4}$ -in. cutting wheel, which requires no sharpening, it cuts steel, iron, brass or copper tubing and pipe up to 2½ inch diameter quickly and smoothly, leaving no ragged edges. It is particularly adapted to the rapid and economical cutting of solid pieces, and high speed steel up to  $\frac{5}{8}$ -in. can be cut true in a surprisingly short time, with little waste and without drawing the temper.

Simple in construction and operation. The material remains stationary in the V shoe, while the wheel is swung forward, by either

hand or foot, to take the cut, and is thrown back to rest position by a spring.

**Price, including countershaft and stock rest, \$75.00.**

*May we send you one on 30 days' trial?  
Write for complete descriptive circular.*

**Nutter & Barnes Company**  
326 A. Street, Boston, Mass.

# Cheaper Burnishing or Buffing



The Abbott Burnishing Process, using hardened Steel Balls, is the quickest, cheapest, and best way of finishing small metal parts in quantities.

We have put the story of this new and better way into a copyrighted booklet, which we shall be glad to send you

free. If you finish small metal parts, it will interest you, and will tell you of a way to cut down the cost of this work 500%.

With this process, two men can do the work of 150 men. And in some instances the quality of the work is greatly improved.

---

---

*Your address on a postal is all we need*

---

---

## The Abbott Ball Co.

12 Hicks Street,

Hartford, Conn.

# It Has Made Good



## The Jacobs Improved Drill Chuck

has "MADE GOOD" because it is the most shapely, compact, convenient, accurate, efficient; and years of continued use have proven it to be the most durable Drill Chuck obtainable.

*Our 34-page illustrated catalogue H sent upon request*

**The Jacobs Manufacturing Company**  
32 Union Place, Hartford, Conn., U. S. A.





## MORROW. Means Time and Money Saved

**By using the Morrow Hand Operated Drill  
Chuck for holding straight shank drills.**

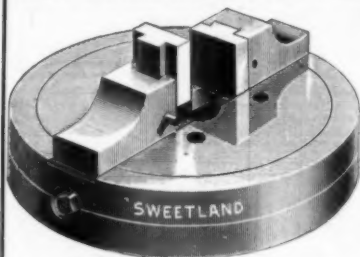
It is only a question of a comparatively short time, when these chucks will be the **only** drill chucks used in any plant where the saving of **time** and **money** is considered. **Why?** Because the Morrow drill chuck is the only drill chuck made that is self-tightening, and that can be released by hand, even to the very largest size with capacity to 1 inch, without the use of key, wrench or spanner. Just think of it, **Mr. User** of drill chucks, a drill chuck holding a 1-inch straight shank drill securely without slipping under the most severe conditions, and readily and easily released by hand. You **know** that **no** other chuck on the market will do this, so buy a **Morrow Chuck** and be convinced.

**Made in five sizes. Send for Booklet.**

*Manufactured by*

**The Morrow Manufacturing Co.**  
Elmira, N. Y.

# Sweetland Lathe Chucks



Combination,  
Universal,  
Independent,  
and  
Grand Scroll  
Chucks,  
and Face  
Plate Jaws.

Universal 2-Jaw Chuck with Steel Slip Jaws.

*Write for Illustrated Catalog and Price List*

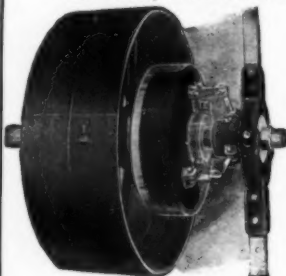
## The Hoggson & Pettis Mfg. Co.

P. O. Box 123

New Haven, Conn.

# The Edgemont Plate Clutch

Designed, after Exhaustive Experiments  
and Tests, to stand both Use and Abuse



It is simple and easily adjusted. The wearing parts are enclosed, permitting them to be used continuously in dusty places. No oil is required on friction plates, which are faced with a burn-proof brake lining, providing a contact surface readily replaced without removal from shaft.

We make clutches for all transmission purposes, including the Edgemont Expanding Clutch, which has been adopted by 40 leading machine tool builders.

*Tell us your wants. Write for Catalog D.*

## The Edgemont Machine Co., 997 Washington St. DAYTON, O.



# JUNK

**Men do not get the caps  
Of Tucker's Positive Lock  
Compression Grease Cups  
They Won't Jar Off**

For Automobiles and all kinds of machinery having excessive vibration. Cup member has internally milled threads to gauge limits, ensuring interchangeability. We are prepared to furnish the cup part in pressed sheet brass in the following sizes:

$\frac{3}{4}$  in., 1 in., and  $1\frac{1}{2}$  in., all 24 pitch thread.

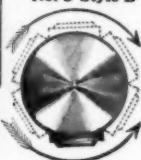
Complete Cups	{	No. 000	{	$\frac{3}{4}$ in. pipe shank
		No. 00		$\frac{1}{2}$ in. pipe shank
		No. 0		$\frac{1}{4}$ in. pipe shank

PATENTED JANUARY 11, 1910

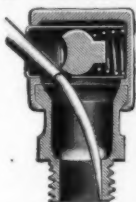
## Tucker's Oil Hole Covers



No. 5 Style B



Self Closing



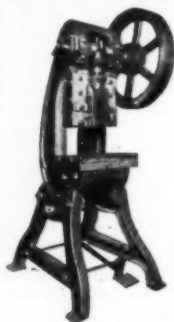
Style C, Self Closing

Note the indent of ball valve on styles B & C



Send for Catalogue of full line of Covers  
for all kinds of machinery having oil holes

**W. C. & F. C. Tucker, Hartford, Conn.**



## Don't Look For Business

Until you know your  
product is all right.

**We are looking for yours**

In building our punch presses, of any style or size, we have thought very strongly of **Two Things**—the **Long Life** of the machine and the **Convenience** of the operator. **Both** features mean **money** to you.

*We make inclinables in all sizes. Send for full description.*

**The Etna Machine Co.**  
Toledo, Ohio

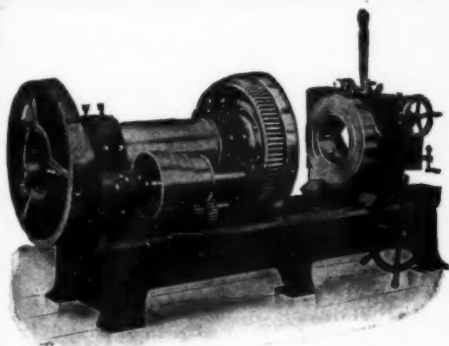


## Open Back Inclinable Foot Press

If you send us an order for one of these presses and are not perfectly satisfied it is the best foot press value you ever saw, you can return it to us at our expense.

*Ask us for prices anyway.*

**Rockford Iron Works**  
Rockford, Ill.



## The Bignall & Keeler Power Pipe Machines

Afford a selection of exactly the right machine for your particular work.

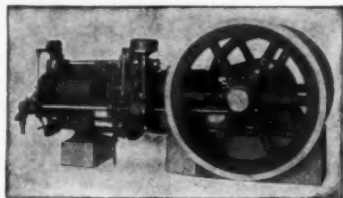
There are 17 styles and sizes, with belt or motor drive, and equipped with Peerless adjustable mechanism. They cut and thread pipe from  $\frac{1}{4}$ -in. to 18 inches.

Our machines stand up perfectly in making up fittings, which, as you know, requires more power and is harder on a machine than the cutting of threads. When you buy a B. & K. it means you get satisfaction.

*Write us for names of customers so you can get the story from the user's standpoint. Our catalogue gives details and various tables*

**Bignall & Keeler Mfg. Co.**  
Edwardsville, Ill.

## Facts About Gas Engines



20 to 200 h. p.

That are  
not generally  
known and  
that were  
never published  
before

THAT'S WHAT you will find in our **Free Bulletin No. 22**—a plain treatise on power selection for the non-technical buyer. It's worth writing for—now.

**The Elyria Gas Power Co.**  
Elyria, Ohio

### Machine Tool Makers

should investigate carefully the facilities offered by **Hitchcock's Machine Tool List** for reaching this trade in all parts of the country. Its circulation is specialized to completely cover *every line of manufacture* in which machine tools are used—as well as all railroad and other tool-using shops—with a thoroughness and effectiveness not equalled by any other advertising medium.

## Don't Knock

the material in your own shop—it costs money. The steady pressure of the Greenerd is much better than knocking and pounding—marring and springing—bending and breaking.



## Greenerd Arbor Presses

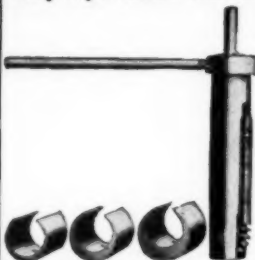
**12 Sizes to 25 Tons Pressure**

save so much time, and so much material, in so many different ways, that the case is exceptional where they do not earn their cost every year. They pay 100% on the investment.

*Ask your dealer—he has them  
Or write for illustrated folder*

**EDWIN E. BARTLETT, 336 A Street,  
Boston, U.S.A.**

## Keyways Milled with the National Keyseater



possess all the properties that are required of keyways. They are central, of proper width and depth, parallel with axis of bore, and one is a duplicate of the other.

The tools are made in the standard sizes most commonly used, from  $\frac{1}{8}$  in. to  $3\frac{1}{2}$  in.

By the use of Bushings many diameters of bores can be keywayed with one tool.

The keyseater can be made to mill double keyways so that the second keyway is milled directly opposite the first.

Taper keyways in straight holes and taper keyways in taper holes can also be milled.

All of the above operations are performed on your drill press.

*Let us send you our booklet*

**National Machine Tool Co.**

128 Opera Place, Cincinnati, Ohio

## Saves Oil—That's All



No. 400—Capacity: 2 Bushels

Doesn't cost a whole lot, doesn't take much room, or power, or attendance, but it does drive out of your oily chips and turnings the last drop of that oil which, when you buy it, costs you so much per. You can safely figure that in a few months this machine will have returned, in oil that would otherwise go to waste, all it cost you, and that it will keep right on saving at the same rate long after you have forgotten the price of it. An economical cinch that you ought not to miss.

*Why Not Have It Now—And Let Your Oil Man Pay For It?*

**Curtis Oil Extractor Company**

25 Union St., Worcester, Mass.



Continual

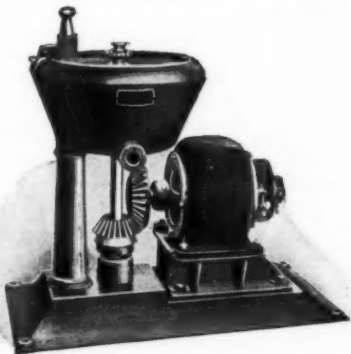
**Dropping**

Will wear a Stone

Continual

**Saving**

Will make a Fortune



Use an

**Oil Separator**

and begin to

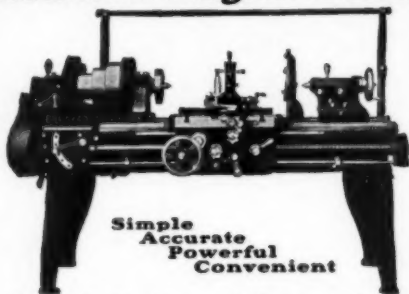
**Save a Fortune**

**The American Tool & Machine Co.**

(Incorporated 1864)

**BOSTON**

# Standard Engine Lathes



**Simple  
Accurate  
Powerful  
Convenient**

Furnished with either standard cone or with 3-step cone double-back-geared, carrying a wide belt, with 18 spindle speeds and wide feed range.

**GREAVES, HLUSMAN & CO.**  
Cincinnati, Ohio, U. S. A.

## WHEN YOU INQUIRE

of advertisers herein, won't you kindly remember to say somewhere in your communication that the inquiry comes from Hitchcock's Machine Tool List? Advertisers are human; they like to know that the medium in which they spend their money is received and consulted by machinery users. Not being mind readers, they can only know this when you tell them, and if you neglect to tell them, the Tool List is deprived of credit for the service it has rendered.

LAT

12  
14  
14  
14  
16  
16  
16  
16  
18  
18  
18  
20  
24  
30  
36

SHA

12  
15  
20  
24

DRIL

20  
26  
30

GEAR

18  
22  
No

12

TURK

14  
16  
No

24

2 x

2x2

3x3

25

MILL

Wh

No

Gar

No

VERT

30 in

72 in

24 in

2 1/2

# Machinery Department

## The W. M. Pattison Supply Company

Cleveland, Ohio

### Offer for Sale

#### LATHES:

12x 5 F. E. Reed, plain rest,	
14x 6 Putnam New Standard, compound rest,	\$160.00
14x 6 F. E. Reed, elevating rest	
14x 6 Reed, compound rest and taper attachment,	250.00
14x 6 Prentice Bros., compound rest and taper attachment,	
16x 6 Pratt & Whitney, plain rest,	150.00
16x 6 Reed, elevating rest,	
16x 6 Prentice Bros., compound rest and taper attach.,	275.00
16x 6 Hendey-Norton, compound rest and taper attachment,	
16x 8 Flather, quick change gr., comp. rest and taper att.	375.00
16x 8 W. P. Davis, plain rest,	
18x 8 Flather, compound rest,	250.00
18x 8 Reed, compound rest,	
18x14 Prentice Bros., compound rest,	375.00
20x12 New Haven, compound rest,	
24x16 Reed, compound rest,	450.00
30x16 Pond Machine Tool Co., compound rest,	
36x16 Bradford, comp. rest, raising blocks to swing 44 in.	800.00

#### SHAPERS:

12 in. Steptoe crank shaper,	
15 in. Gould & Eberhart back geared crank shaper,	200.00
20 in. Hendey friction geared shaper, adjustable table,	
24 in. Stockbridge back geared crank shaper,	375.00

#### DRILLS:

20 in. Silver, round base and lever feed,	
26 in. New Haven, back geared, power feed,	100.00
30 in. Aurora, bk. geared, pwr. feed, auto. stop, gd. tap'g attach.	

#### GEAR CUTTERS:

18 in. Becker-Brainard spur and bevel gear cutter,	
22 in. Gould & Eberhart spur and bevel gear cutter,	250.00
No. 1 Schuchardt & Schutte auto. gear hobber, for spur, worm and spiral gears,	
12x 6 Gould & Eberhart auto. gear hobber, for spur, worm and spiral gears,	500.00

#### TURRET MACHINERY:

14 in. x 5 ft. Warner & Swasey turret lathe, friction geared head,	
16 in. x 5 ft. Warner & Swasey tur. lathe, friction gd. hd.,	200.00
No. 4 Bardons & Oliver turret screw niche, 1½ in. cap., fr. geared hd., auto. chuck, wire fd., pwr. fd. to turret; hand longitudinal and power feed to cutoff slide,	
24 in. x 7½ ft. W. P. Davis turret forming lathe,	450.00
3 x 24 Jones & Lamson turret lathe, with chucking outfit,	
2x24 Jones & Lamson flat turret lathe, with bar outfit,	700.00
3x36 Jones & Lamson flat tur. lathe, with chucking and bar outfits,	
25 in. x 10 ft. LeBlond comb. tur. lathe, q.c.g., dbl. fr. b. g. hd., pwr. fd. to tur., tur. tool post on carriage, 21 in. heavy jaw chuck, fitted,	1,000.00

#### MILLING MACHINES:

Whitney No. 6 manufacturers' hand milling machine,	
No. 2½ Hendey Lincoln pattern milling machine,	275.00
Garvin vertical spindle traverse head milling machine,	
No. 5-B Becker vert., rotary tbl., 17 cutters, ¼ to 8 in.,	900.00

#### VERTICAL AND HORIZONTAL BORING MILLS:

20 in. Bullard vertical turret boring mill,	
72 in. Betts vertical boring mill, with two swivel heads,	2,000.00
2½ in. bar Lucas horizontal boring machine,	
2½ in. Binsse hor. boring machine, with circular table,	750.00

**In revising our manufacturing equipment, we find the following first class Used Machine Tools, which we offer at attractive prices:**

**ENGINE LATHES**

16x 6 Hendey, q. c. g.  
16x 6 Lodge & Shipley, q. c. g.  
16x 6 Pratt & Whitney, q. c. g.  
16x 8 Reed  
18x 8 Lodge & Shipley, q. c. g.  
18x10 Lodge & Shipley, q. c. g.  
20x 8 Lodge & Shipley, q. c. g.  
20x10 Lodge & Shipley, q. c. g.  
24x 8 Lodge & Shipley, q. c. g.  
24x10 Lodge & Shipley, q. c. g.  
36x12 Lodge & Shipley, q. c. g.

**SPECIAL LATHES**

24x7 Lodge & S. chucking lathe.  
No. 3 Lodge & Shipley rapid reduction lathe

**METAL SAWS**

No. 3 Nutter-Barnes cold saw  
Franklin cold saw, 3½ in. cap.  
Globe power hack saw, 8 in. cap.

**MISCELLANEOUS**

Mumford 12x40 molding mach.

*Write for complete description with prices of machines in which you are interested*

**The Lodge & Shipley Machine Tool Co.  
CINCINNATI, OHIO, U. S. A.**

**If You Want to Buy or Sell  
Second-Hand Machinery  
Or if you have any for sale**

**Ask**

**Buffalo Tool & Supply Co.  
40 Henry St., Buffalo, N. Y.,**

**What they can do for you.**

**They are equipped to make it interesting.**

Se

14x 6 W  
16-28x 8  
18x15 W

72 in. B  
No. 2 C

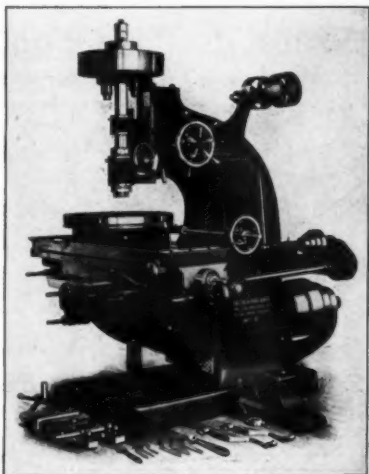
15 in. S  
16 in. G

Bolt cut  
Boring m  
swivel  
Cutter g  
Drills, u  
makes.

Mars  
17 S. Je

# Second Hand Machinery Bargains

## A Sample



**No. 6 Becker-Brainerd Vertical Milling Machine.**

### LATHES.

14x 6 Whitcomb-B., taper, ch'k.  
16-20x 8 American, gap, com. rest.  
18x15 Whitcomb-B., with chuck.

25x20 Sellers.  
26x14 American.  
2x24 in. Jones & Lamson, flat turret.

### MILLING MACHINES.

72 in. Burr, keyseat, routing attach.  
No. 2 Cincinnati, plain, cone drive.

No. 3 Cin'ti. uni., all fds., cone dr.  
No. 3 Owen, plain.

### SHAPERS.

15 in. Springfield, plain crank.  
16 in. Gould & Eberhardt, back gd.

16 and 20 in. Smith & Mills, back gd.  
20 in. Kelly, back geared.

### MISCELLANEOUS.

Bolt cutter, 1 in. Landis.  
Boring mills, 42 and 76 in. Bullard, 2 swivel heads.  
Cutter grinder, No. 3 Brown & S.  
Drills, upright, 20 to 34 in. swing, all makes, fine condition.

Gear cutter, 36x9 in. Gould & E.  
Gear shaper, 36 in. Fellows.  
Grinder, 24 in. Springfield.  
Hammer, fr. bd.drop, 1500 lbs. B & S.  
Planer, 36x36x10 Whitcomb. 2 heads.  
Slotter, draw stroke, 20 in. Baker.

We have many others. Write for descriptions and prices.

**Marshall & Huschart Machinery Company**

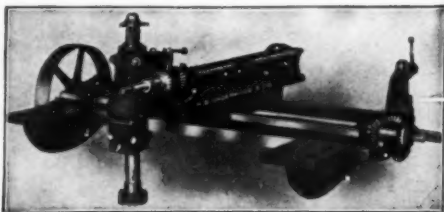
17 S. Jefferson St., Chicago.

334 N. Capitol Ave., Indianapolis.

925 Chemical Bldg., St. Louis.

# Milling In Place With a Portable Tool

Is a Time and Money Saving Proposition



## Our Portable Milling Machine

Enables you to take the tool to the job and to do it in place, which in many cases is so much quicker and cheaper than to move the work to the shop, that the economy of it quickly pays for the machine. The Portable Miller will face a valve seat 22x40x7 in., or do other milling of similar dimensions, and is easily adapted to any work within its capacity. Operated by hand or any type of air, steam or electric motor. Not a toy or make-shift, but a real machine tool in power, accuracy and reliability. One of our large family of portable tools which have made quick repair work a source of large profit in hundreds of shops. They are indispensable in railway repair work.

*Our Catalogue will interest you. Send for it.*

**H. B. Underwood & Company**  
1022 Buttonwood St., Philadelphia, Pa.

Lists  
under  
with  
the na  
Prices  
parties  
slip in

**Nutter**

Oil sep  
cond  
Snagge  
Wet to

**Frever**

Grinde  
Grinde  
Grinde  
Grinds  
Miller,  
Pinion  
auton  
Press,

**Girard**

24 and  
turre  
40 in. C  
30x12 F

Boring  
Gear sh  
Planers

**Brown**

18 in. A  
brass  
24 in. x 1

30x30x1  
42x42x1  
20 in. C

Bolt cu  
Bolt cu  
Drill p

## Second-Hand Machinery.

Lists of second-hand machinery, either for sale or wanted, will be published under this heading at the rate of **40 cents a line**, across the page, each issue, with a minimum charge of **\$4.00**. Sub-headings are counted as one line, but the name and address of advertiser are not included in the space charged for. Prices and full descriptions of the machines listed will be furnished by the parties offering them for sale. If you do not find what you require, use the slip inclosed with each book to make known your wants to the publisher.

### FOR SALE BY

**Nutter & Barnes Company, - - - 326 A St., Boston, Mass.**

Oil separator, American Tool & Mach. Co., centi fugal, 14 in. pot, good condition.....	\$ 40.
Snagging wheel machine, with two 16x3 in. wheels, good condition.....	35.
Wet tool grinder, 16x3 in. wheel, good condition.....	25.

### FOR SALE BY

**Fevre Machinery Co., - 18 Dey St., New York City**

Grinder, cutter, No. 1 Cincinnati, pl.	Profiler, Garvin, 1 spindle.
Grinder, 9x26 in. universal.	Riveter, 1 in. Shuster.
Grinder, wet tool, No. 2 Diamond.	Screw miche., 13-32 in. B. & S., auto.
Grindstone frame, on wheels, 48x6 in.	Screw machine., 7-16 in. Cleveland, automatic.
Miller, No. 2 Garvin Lincoln.	Screw machine, hand, No. 2 P. & W.
Pinion and gear cutter, No. 1 Slate, automatic.	Shaper, crank, 18 in. Ohio.
Press, No. 18 Bliss, inclined.	Turret lathe, 2x24 in. Jones & L.

### FOR SALE BY

**Girard Machine and Tool Co., - 499 N. Third St., Philadelphia, Pa.**

#### LATHES.

24 and 36 in. Jones & Lamson flat turret lathes.	34x12 Pond.
40 in. Gisholt turret lathe.	30x10 Pond. heavy duty.
36x12 Blaisdell.	30x18 L. & S. p. h. lathe.
	42x10 Putman, dbl. b. g.

#### MISCELLANEOUS.

Boring mills, vertical, 30 to 60 in. Bullard.  
 Gear shapers, 36 in. Fellows.  
 Planers, 24 to 48 in., single and double head.

### FOR SALE BY

**Brown & Zortman Machinery Co., 2535 Liberty Ave., Pittsburg, Pa.**

#### LATHES.

18 in. American Tool & Machine brass lathes, (2).	24 in.x14 ft. Lodge & Shipley patent head lathe.
24 in.x14 ft. New Haven.	36 in.x20 ft. Betts.

#### PLANERS AND SHAPERS.

36x30x12 Sellers planer.	24 in. Juengst shapers, (2).
42x42x18 Betts planer.	28 in. Juengst shaper.
20 in. Gould & Eberhardt shaper.	30 in. Morton draw cut shaper.

#### MISCELLANEOUS.

Bolt cutter, 1 1/2 in. National.	Grinder, universal, No. 2 Diamond.
Bolt cutter, 2 1/2 in. National.	Grinder, universal, No. 2 Landis.
Drill press, 30 in. New Haven.	Pulley boring machine, 50 in. Niles.

## SECOND-HAND MACHINERY

### FOR SALE BY

**The Motch & Merryweather Machinery Company,**  
**707-715 Lakeside Av., N. W., Cleveland, Ohio**  
**Branches: Detroit, Cincinnati, Pittsburgh.**

Our illustrated Booklet of Rebuilt Machine Tools sent on request.

#### BORING MACHINES.

- 37 in. Bullard with two heads, combination chuck table, good shape.
- 36 in. Bullard, v. t. l., in good condition.
- 30 in. Bullard swivel head, combination chuck table, in first class condition.
- 24 in. bar Binsse horizontal, late type, first class condition.
- 34 in. bar, Niles horizontal, table type, good condition.

#### DRILL PRESSES.

- 20 in. Style "F" Baker, back geared, power feed, very good condition. (2).
- 21 in. Hoeler, back geared, good as new.
- 21 in. Bickford, sliding head.
- 24 in. Hamilton, sliding head, late type, first class condition.
- 28 in. Rockford, sliding head, good as new.
- 28 in. Aurora, sliding head, back geared, power feed, first class condition.
- 26 in. New Haven, back geared, sliding head, good condition.
- 30 in. Bickford, sliding head, back geared, power feed.
- 36 in. New Haven, sliding head, back geared, A 1 condition.
- 32 in. Pond, sliding head, back geared, power feed, good condition.
- 4-spindle Pratt & Whitney sensitive.
- 4-spindle Garvin 20 in. geared drill.
- 6-spindle Quint turret, first class condition.
- 8-spindle Gardam, good condition.

#### DRILLS—RADIAL.

- 36 in. plain radial, good shape.
- 36 in. Fosdick, tapping attachment, first class condition.
- 42 in. Niles, round column, back geared, gear feed, half universal, A 1 cond.
- 48 in. Fosdick, gear drive and feed, tapping attachment, first class condition.
- 48 in. Prentice, plain, heavy tool, good condition.
- 48 in. Box half universal, good condition.
- 5 ft. Fosdick, plain, gear feed tapping attachment, first class condition.
- 5 ft. Pond, plain, in good shape. (2).
- 6 ft. Pond, plain, gear feed, good condition.

#### GEAR CUTTERS.

- No. 60 Heald cylinder grinders, first class. (2).
- No. 2 Dwight Slate, capacity 8x4 in. cuts up to 12 d. p.
- 26 in. Brown & Sharpe spur gear, very good condition.
- 26 in. Fellows gear shaper.
- 48 in. Gould & Eberhardt, first class condition.
- 64x16 Gould & Eberhardt, fair condition.
- 66x14 Gould & Eberhardt spur, very good condition.

#### GRINDERS.

- Heald, drill, good as new.
- Yankee, drill, good condition.
- Blount and Gisholt tool grinders, good condition.
- Heavy foundry, good as new, double wheel.
- 10x36 Landis, plain, with internal grinding attachment, good condition.
- No. 1 Landis, internal, good condition.
- No. 2 Morse, plain, first class condition.
- No. 2 Leland & Falconer, tool, double wheel, good shape.
- No. 3 Landis, universal, good condition.
- No. 3 Landis, plain, very good condition.
- No. 3 Diamond, polishing. (2).
- No. 11 Brown & Sharpe, plain, first class condition.
- No. 24 Landis, plain, with attachments, very good condition.
- 12x66 Landis, plain, with crankshaft attachment, first class condition.
- Heald Ring surface grinders, good condition. (2).
- Cincinnati cutter grinder, good condition.

#### LATHES.

- 14x 6 Prentice, taper attachment, good condition.
- 16x 6 Flather, plain rest, taper attachment.
- 16x 6 Reed, rise and fall rest, good condition. (2).

18x8 Fa  
18x8 W  
18x 8 L  
18x10 S  
22x12 P  
22x16 P  
24x14 H  
26x16 N  
28x24 N  
48x24 N  
60x16 F  
Roll lat

No. 1  
No. 3  
No. 3

15 in. B  
22x22 4  
22x22 6  
24x24 6  
24x24 8  
28x8 De  
28x28 8  
28x38 8  
48x18 16

15 in. H  
16 in. F  
16 in. Q  
24 in. Gu  
20 in. Ke  
20 in. Ho  
22 in. Sm  
24 in. H  
24 in. Sm  
24 in. Lo  
26 in. Cin

No. 4 Pr  
2x24 in. J  
4 in. Cle  
2 in. Gis  
2 in. Gis  
Davis 24  
2x10 Loc  
2 in. Gis

Bending  
Bolt cutte  
Cold saw  
Grinder, r  
Hammer,  
Hammer.  
Keyseater  
Keyseater  
Pattern m  
Pipe mach  
Pipe mach  
Planer, p  
Press, No  
Riveter, p  
Slotter, 8  
Tapper, P



## SECOND-HAND MACHINERY

### The Motch & Merryweather Machinery Co.—Continued.

#### LATHES—Continued.

- 18x8 Fay & Scott, comp. rest, late type, first class.  
18x8 Walcott & Wood, comp. rest, first class condition.  
18x 8 Lodge & Davis, comp. rest, taper attachment, very good condition.  
18x10 Schumacher & Boye, chuck, comp. rest, first class condition.  
22x12 Pond, comp. rest, chuck, good condition.  
22x16 Pond, comp. rest, fair condition.  
34x14 H. B. Fish, comp. rest lathe and chuck, good condition.  
28x16 New Haven, comp. rest, fair shape.  
28x24 New Haven, comp. rest, chuck jaws, attachments, good condition.  
48x34 Niler, triple geared, comp. rest, raising blocks, steady rests, good cond.  
48x16 Fifield, comp. rest, very good.  
Roll lathe, 39 in. swing by 9 ft. centers, good condition.

#### MILLING MACHINES.

- No. 1 Eynon universal, good condition, no attachments.  
No. 2 Garvin plain, with arbor and vise, good condition.  
No. 3 Cincinnati plain, belt feed, first class condition.

#### PLANERS.

- 15 in. Bush, crank, good shape.  
22x22x 4 New Haven, single head, first class condition.  
22x22x 6 Gray, single head, good condition, (2).  
34x24x 6 Ohio, single head, first class condition.  
22x24x 8 Powell, single head, good condition.  
28x8 Detrick & Harvey, open side, two heads, good condition.  
22x22x 8 Lodge & Davis, single head, fair condition.  
28x26x 8 Sellers, spiral drive, single head, good condition.  
28x48x16 Detrick & Harvey, open side, two heads, very good condition.

#### SHAPERS.

- 15 in. Hendey, friction, with vise, first class condition, (2).  
16 in. Flather, gear box drive, latest model, first class condition.  
16 in. Gould & Eberhardt, back geared, good condition, (2).  
21 in. Queen City, crank, good as new.  
21 in. Kelly, latest type, good as new, with vise.  
21 in. Hendey, friction, first class condition, with vise.  
22 in. Smith & Mills, shifting belt, first class condition.  
21 in. Hendey, friction, with vise, good condition.  
21 in. Smith & Mills, shifting belt, first class condition.  
21 in. Lodge & Davis, shifting belt, fair condition.  
21 in. Cincinnati, shifting belt, very good condition.

#### TURRET LATHES AND SCREW MACHINES.

- No. 4 Pratt & Whitney chucking machine, fair condition.  
24 in. Jones & Lamson, sliding head, very good condition.  
4 in. Cleveland auto., latest type, 1st. class shape, collets pads and equipment.  
2 in. Gisholt, latest type, first class condition, with equipment.  
2 in. Gisholt, old type, good condition.  
Davis 24x24 in. chucking machine, first class.  
24x10 Lodge & Shipley turret, good condition.  
2 in. Gisholt, late type, power rapid traverse, good condition.

#### MISCELLANEOUS.

- Bending machine, belt driven, weight about 8,500 lbs., good condition.  
Bolt cutter, 2 in. Acme, good condition, with dies.  
Cold saws, No. 1 Burr, very good condition, (2).  
Grinder, motor driven, 12x2 in. Ransom, first class condition.  
Hammer, tire welding, No. 35 Williams White, good condition.  
Hammer, drop, 1200 lbs. Billings Spencer.  
Keyseater, No. 3 Mitts & Merrill, first class condition, with equipment.  
Keyseater, 18x12 in. Morton, with bars and cutters, good condition.  
Pattern makers' lathes, 20 in. x8 ft. swing, (2).  
Pipe machine, lathe bed type, 6 in. Saunders, in good condition.  
Pipe machine, 12 in. Curtis, with dies, very good condition.  
Planer, portable, Morton, electric drive, 40 in. stroke, good condition.  
Press, No. 19 Stiles & Parker, inclinable, 2 in. stroke, first class condition.  
Riveter, pneumatic, 10 in. stroke, good condition.  
Slotter, 8 in. Newton, in good condition.  
Tapper, Pratt & Whitney, good condition.

## SECOND-HAND MACHINERY

### FOR SALE BY

**The E. L. Esley Mchy. Co.**

**817 Washington Blvd., Chicago, Ill.**

A partial list of used machinery for quick delivery. We have a large stock of new machine tools not listed here. If you don't find here what you want, write us, giving sizes and detail. Our stock is changing constantly and we may have what you want.

#### DRILLS.

4 spindle Quint turret drill.  
6 spdl. No. 3 Garvin, mult., table fd.  
20 in. S. & W., sq. base, (4).  
4 spindle Barnes Drill Co.'s all gd.  
gang drill, b. g. and p. f.  
18 in. Baker Bros. high speed, (2).  
28 in. W. F. & J. Barnes, sliding  
head, complete; fine condition.

28 in. Hamilton, sl. hd., b. gd., p. f.  
28 in. Kern, sl. hd., tapping att.  
32 in. Prentice Bros., sliding head.  
25 in. Barnes sta'y hd., b. g. and p. f.  
2 ft. American, sensitive radial.  
Foote-Burt 4sp. No. 154, universally  
adj. for auto. work, fine.

#### ENGINE LATHES.

12x5 Pratt & W. tool r., collets, taper,  
pan, etc., fine order.  
14x6 Bradford and Flather, comp. r.  
14x6 American, plain rest.  
14x6 American, c. r., nearly new (3).  
15x6 Walcott, back geared, rebuilt.  
16x6 Muller, hollow spindle, p. c. f.

16x8 Milwaukee, c. r., nearly new.  
18x10 Blaisdell, plain rest.  
18x10 Putnam.  
20x8 Bridgeport, c. r.  
20x10 D. W. Pond, c. r., rebuilt.  
21x6 Lodge & D., pl. r.  
21x10 Fifield, compound rest.

#### MISCELLANEOUS LATHES.

No. 21 Garvin, plain head, Monitor,  
13-16 in., hollow spindle.  
30 in. x 8 ft. P. & W. p. hd. chucking  
lathe, 24 in. 4-j. chk., p. f. to t. s.

13 in. Gisholt, standard turret, comp.  
Pearson b. g. hub machine, like  
turret lathe, 24 in. h. s.

#### PLANERS.

15x15x26, 1 head.  
20x15x26 L. W. Pond, 1 head.  
20x17x3 New Haven, 1 head.  
25x25x6 Aldrich & C., 1 hd.

24x24x6 Whitcomb-B., 1 head, new,  
special low price.  
30x30x8, 1 head.  
30x30x16 Hamilton, 2 heads.

#### SCREW MACHINES.

No. 3 Woods tilted turret screw  
machine, 14 in. cap., fine order.  
No. 24 Garvin, w. f., a. c., 17-16 in. cap.  
18 in. Lodge & D., b. g., 24 in. cap.  
No. 2 Warner & S., complete.

#### TURRET LATHES.

No. 24 Pratt & W. screw machine.  
No. 2 Pearson, complete, 1 1-16 in.  
w. f. capacity.  
2 in. x 24 in. Jones & L. flat turret,  
cone head, "D" outfit, fine order.

#### MISCELLANEOUS.

Blower, steel, No. 10 Sturtevant, 7 ft  
high, 18 in. outlet.  
Blower, No. 6 Boston & Co., S.  
Bolt header, 8 in. Burdick.  
Bolt cutter, 14 in. Adams, single.  
Boring machine, 2 sp. Foote-Burt  
vert. adj., for auto. work, fine.  
Boring mill, 30 in. Colburn, 3-j. ck.  
Boring mill, 34 in. Colburn.  
Boring mill, 42 in. Bullard, 2 hds.,  
3-j. comb. ck.  
Brake, cornice, 36 in. D. & K., hand.  
Brake, cornice, 8 in. D. & K., hand.  
Cold saw, No. 4 Keystone, 44 in.  
Cold saw, No. 14 Hagley, fine order.  
Enameling oven, for gas, 6x4 ft.  
Gear cutter, 24 in. Brainerd, s. & b.  
Gear Hobber, 12 in. No. 1 Farwell.  
Grinder, disc, No. 4 Besly, 18 in.  
Grinder, disc, No. 1 Z Besly, 12 in.  
Grinder, disc, No. 6 J Gorton, 18 in.  
Grinder, plain, Brown & S., 12x18 in.  
Grinder, 20x3 Diamond, single wet.  
Grinder, Greenfield, tap and die.  
Hammer, steam, 1,250 lbs. Morgan,  
single frame.

Hammers, drop, No. 5 Williams-W.,  
crank lift, (2).  
Keyseater, No. O Mitts & Merrill.  
Miller, No. 2A Kemp Smith, fine order.  
Miller, No. 2 Fox, hand.  
Miller, No. 24 Garvin, plain.  
Miller, No. 2 Kearney & T., b. gd., pl.  
Miller, 20x7x17 Osterlein, b. gd., pl.  
Pipe mche., 4 in. Borden, complete.  
Punch press, V. & O. double crank,  
st. s. with power feed rolls, fine.  
Punch press, No. 2 Am. Can. o. binc.  
Punch press, No. 15 Toledo, dp. thr.  
Punch & shear, No. 2 Colton, dbl. end,  
20 & 8 in. thts., cap. 4x4, 14 in. rds.  
Punch & shear, New Doty comb.,  
4 x 4 in. flats, 6 in. thr.  
Punch, No. L 10 Rock River, 8y  
wheel, single, 10 in. tht., cap. 4x4.  
River spinner, 8 in. National.  
Rolls, tinner, 30 in. hand, bench.  
Shapers, 24 in. Milwaukee, b. g., fine.  
Splitting shear, Ferris & Miles, 24 in.  
throat, 14 in. blades.  
Tapper, No. 1 Garvin, vertical.  
Threading mche., roll, Rudolphi & K.

## SECOND-HAND MACHINERY

### FOR SALE BY

**Prentiss Tool & Supply Co., New York, Boston, Buffalo, Syracuse.**

#### LATHES.

9x44 Star, plain rest, p. c. f.  
11x 5 Champion, c. r., p. c. f.  
12x 6 LeBlond, quick change, c. r.  
12x 5 Prentice Bros., c. r., p. c. f.  
14x 5 Reed, rise & fall, p. c. f.  
14x 6 Reed, compound rest, p. c. f.  
16x 6 Fay & Scott, c. r., p. c. f.  
16x 6 Hendey, c. r., p. c. f.  
16x 6 Porter, c. r., p. c. f.  
16x 8 Porter, c. r., p. c. f.  
16x 8 Bullard, compound rest, p. c. f.  
18x 6 Hendey-Norton, quick change.  
18x 6 Lodge & D., compound rest, p. c. f., taper.  
18x 8 Reed, c. r., p. c. f.  
20x10 Draper, c. r., p. c. f.  
20x10 Fifield, compound rest, p. c. f.  
22x10 Bullard, compound rest, p. c. f.

26x12 Fish, compound rest, p. c. f.  
27x12 Pratt & Whitney, comp. rest.  
30x12 Niles, c. r., p. c. f.  
26x22 New Haven, compound rest.  
28x12 Putnam, c. r., p. c. f.  
30x12 Johnson, c. r., p. c. f.  
32x17 Bement triple geared, compound rest, p. c. f.  
36x14 Lodge & Shipley, c. r., p. c. f.  
36x16 Reed, compound rest, p. c. f.  
38x20 Fay & Scott, compound rest.  
40x18 Newark, triple geared.  
46x38 Fitchburg, triple geared.  
54x20 compound rest, p. c. f.  
103x35 Bement, triple geared.  
54 in. Niles wheel lathe.  
16 in. x10 ft. auto. threading lathe.  
60 in. Stevens pulley lathe.

#### MILLERS.

No. 1 Cincinnati, universal.  
No. 2 Owen, plain, b. g.

No. 1 Milwaukee, universal.  
8 ft. Beaman & Smith, planer type.

#### DRILLS.

7-spindle Slate, gang.  
4 spindle Henry & Wright.  
Style F, 12 in. Baker Bros.  
4 spindle Foote-Burt, adj. rail.

3-spindle Barnes, gang.  
36 in. Bickford radial, b. g., tap. att.  
10 spindle Gardam, adjustable.

#### SHAPERS.

16 in. Gould & Eberhardt, crank, b. g.  
16 in. Steptoe, crank, b. g.  
14 in. Juengst, horizontal crank.

26 in. Lodge & Davis, shifting belt.  
21 in. Lodge & Davis, crank.  
24 in. Gould & Eberhardt crank.

#### GEAR CUTTERS.

No. 1 Whiton spur & bevel.

No. 1 Slate, auto, pinion cutter.

#### SCREW MACHINES.

1/2 in. No. 1 Garvin, wire feed.  
4 in. No. 52 National-Acme, auto.  
1/2, 1, 1 1/2 & 2 in. P. & W., auto.  
3x36 Jones & Lamson.  
3x36 Pratt & Whitney.

No. 2 Warner & Swasey, wire feed.  
1 1/2x18 in. Pratt & Whitney.  
No. 6 2 1/2 in. W. & S., wire feed.  
1 in. No. 3 Pratt & Whitney, wire fd.  
4 in. Bardons & Oliver, wire feed.

#### PLANERS.

15x15x 3 Pratt & Whitney, 1 head.  
22x22x 4 Powell, 1 head.  
24x24x 6 Fether, 1 head.  
24x24x 6 Pease, 1 head.  
33x32x 8 Betts, 1 head.

30x30x10 Gleason, 1 head.  
30x30x 7 Wheeler, 1 head.  
38x38x 8 Gleason, 1 head.  
48x42x 8 Farrel, 1 head.  
60x60x12 New Haven, 1 head.

#### HAMMERS.

25 lb. Dupont, trip.  
50 lb. Bradley, compact.

200 lb. American, steam.  
400 lbs. Stiles, board drop.

#### MISCELLANEOUS.

Boring mill, 2 1/2 in. bar, Bement.  
Boring mill, 61 in. Bausch & Harris.  
Boring mill, 10 ft. Pond.  
Boring mill, vert., 50 in., Niles.  
Boring mill, vert., 62 in. Bullard.  
Cylinder borer, Beaman & Smith.  
Fan, exhaust, 50 in. Buffalo.  
Grinder, disc, No. 1 Besly.  
Grinder, cylinder, No. 60 Heald.

Grinder, plain, 12x42 Landis.  
Grinder, surface, Walker.  
Pipe machine, 4 in. Saunders.  
Press, 2 in. stroke, adjustable bed.  
Press, No. 4 Mossberg & G., inc.  
Punch & shear, double end.  
Shear, squaring, 30 in. Niagara.  
Slotter, 13 in. Bement.  
Tumbling barrel, 30x24 Smith.

Send for latest complete List.

## SECOND-HAND MACHINERY

### FOR SALE BY

**The H. A. Stocker Machinery Co., 566-72 W. Randolph St., Chicago  
610 Merrill Building, Milwaukee, Wis.**

Something in this List ought to interest you. Let us know what it is.

#### LATHES.

- |  |   |
|--|---|
| 14x6 Lodge & Shipley, pat. head.                                     | 21x10 Bradford, comp. rest, taper attachment, fine order. |
| 15x5 Star, chuck fitted.   | 25x12 New Haven, c. r. and chuck.                         |
| 16x6 Am. Tool Wks. geared head.                                      | 30x14 Fifield, compound rest.                             |
| 16x6 Bradford, compound rest.  | 31x18 Bradford, c. r. and chuck.                          |
| 16x6 Davis c. r. (new, reduced price.)                               | 32x16 Davis, double back gears (new, reduced in price).   |
| 16x6 L. & S., c. r., q. c. g.  | 39x12 Putnam, compound rest.                              |
| 16x8 Lodge & Shipley, pat. head.                                     | 18-36 in. x8 ft. Fay & Scott gap lathe.                   |
| 20x12 Greaves & Klusman, comp. rest, turret on shears, chuck fitted. |   |
| 22x16 Flather, c. r. and chuck.                                      |   |

#### SHAPERS.

- |                                     |   |
|-------------------------------------|---|
| 15 in. Hendy, like new.             | 18 in. Flather, single geared crank.                    |
| 16 in. Queen City, new, reduced pr. | 24 in. Flather, gear box drive, new, special low price. |
| 16 in. Walcott, little used.        |   |

#### PLANERS.

- |   |                                     |
|---|-------------------------------------|
| 72x72x14 Niles, 4 heads, like new.      | 32x32x10 Gray, 2 heads.             |
| 48x48x20 Belmer, 4 heads, rebuilt.      | 32x32x12 Ohio, 2 heads.             |
| 44x44x12 Pond, 2 heads.                 | 32x32x8 Am. Tool Works, 1 head.     |
| 40x38x14 Putnam, old style, low pr.     | 30x30x12 Belmer, 2 heads.           |
| 36x36x12 Gray, 2 heads.                 | 30x30x10 Flather, 3 heads.          |
| 36x36x14 Belmer, 2 heads.               | 26x26x8 Whitcomb (new, reduced pr.) |
| 36x36x10 Gray, 2 heads.                 | 22x22x5 Whitcomb, good order.       |
| 36x30x12 Sellers, old style, low price. |                                     |

#### MILLING MACHINES.

- |   |                                       |
|---|---------------------------------------|
| No. 3, Cincinnati, high power, all geared, single belt. | No. 2 Cincinnati pl. back geared.     |
| No. 3 $\frac{1}{2}$ Waltham, bench.                     | No. 2 LeBlond, universal.             |
| No. 13 Garvin, plain.                                   | No. 3A Brown & Sharpe, universal.     |
| No. 5 Garvin, plain back geared.                        | No. 2 Thurston die miller.            |
|   | No. 4 Becker, univ. (new, low price). |

#### UPRIGHT AND RADIAL DRILLS.

- |                                       |  |
|---------------------------------------|--|
| 2 $\frac{1}{2}$ ft. Fosdick National. | 38 in. New H. sl. hd., bk. gr., p. fd.     |
| 3 ft. Fosdick standard.               | 35 in. Blaisdel, sl. hd., bk. gr., p. fd.  |
| 5 ft. arm Western, universal.         | 28 in. Superior, b. g., p. f. & a. s.      |
| 5 ft. Bickford, plain, gear box.      | 25 in. Prentice Bros., sl. hd., b.g., p.f. |
| 4 ft. Bickford, plain cone.           | 20 in. and smaller.                        |
| 6 ft. Bickford.                       |  |

#### SENSITIVE DRILLS.

1 to 6 spindles, various makes.

#### POWER PRESSES.

- |   |  |
|---|--|
| No. 1 $\frac{1}{2}$ Bliss, cam drawing. | No. 4 $\frac{1}{2}$ Am. Can. Co., large die space. |
| No. 66B Niagara, double crank.          | No. 3 American Can, o. b. i., 2 in. s.             |
| Geared forming press, 7 ft. bet. upr.   | No. 2 American Can, o. b. i., 2 in. s.             |
| C94 Ferracute, armature notching.       | No. 5 Niagara, o. b. i., good order.               |
| 500 lbs. Mossberg auto. drop press.     | No. 50 Crosby, inclinable.                         |

#### BORING MILLS—VERTICAL AND HORIZONTAL.

- |  |                                      |
|--|--------------------------------------|
| 51 in. Niles, 2 heads.                         | Fitchburg horizontal, 36 in. swing.  |
| 10 in. Niles, 2 heads.                         | 34 in. Colburn, swivel turret.       |
| 53 in. Colburn, 2 heads.                       | 42 in. Niles car wheel borer.        |
| 42 in. throat, capacity 4x1 $\frac{1}{2}$ in.  | BEMENT SINGLE END PUNCH AND SHEARS.  |
| Humphrey sgl. end punch and shear,             | Cincinnati sgl. end punch and shear. |
| 36 in. throat, capacity 1 $\frac{1}{2}$ x1 in. | 8 in. throat, capacity 4x4 in.       |

#### SCREW MACHINES AND TURRET MACHINES.

- |  |   |
|--|---|
| No. 2 Pratt & Whitney.                   | 2 $\frac{1}{2}$ x26 Warner & Swazey.          |
| No. 2 $\frac{1}{2}$ Pratt & Whitney.     | 3x36 Jones & Lamson.                          |
| No. 4 B. & O. screw machine.             | 22 in. Gisholt, fine condition.               |
| No. 51 National-Acme automatic.          | 24 in. Davis Machine Co.                      |
| 1 $\frac{1}{2}$ in. Cleveland automatic. | 14 turret lathes, small sizes, various makes. |
| 1 $\frac{1}{2}$ in. Cleveland automatic. |   |

## SECOND-HAND MACHINERY

### The H. A. Stocker Machinery Co.,—Continued.

#### MISCELLANEOUS.

Bolt cutter, 1½ in. Schlenker.  
Bolt header, 4 in.  
Centering machine, 4 in. Whiton.  
Cold saw, No. 4 Birdsboro, 6 ex. saws.  
Crane, 30-ton Niles, 72½ ft. span.  
Gas furnace, No. 1 Stewart comb.  
Gear cutter, 30 in. Flather.  
Gear cutter, 50 in. Gould & E., auto.  
Gear hobbing machine Reynolds.

Gear hobbing machine, No. 0 S. & S.  
Gear hobbing machine, No. 1 S. & S.  
Hammer, helve, 500 lb. Bradley.  
Hammer, drop, 500 lb. National.  
Hydraulic press, 40 ton.  
Hydraulic press, 100 ton with pump.  
Pipe machine, 4 in. Saunders.  
Pipe machine, 4 in. Stoeber.  
Riveter, 3-16 in. Adt.

#### FOR SALE BY

**E. G. Eldridge,**

**566 Washington Blvd., Chicago, Ill.**

High Quality and Low Prices on the following:

#### DRILLS.

16 in. style "A" Fox sgl. sp., belt dr., sens., with 2 tables.	25 in. P. & W., p. f., sliding head.
3 spindle sensitive gang, (2).	2½ ft. Dresses latest model radial.
4 spindle W. & R. sensitive gang.	3 ft. American, practically new, b. g. radial, tap. attach.
20 in. Barnes, b. g., p. f., nearly new.	Twenty (20) other drill presses.
24 in. L. & D., b. g., p. f. sliding hd.	

#### LATHES.

11 in. x 5 ft. Star, plain and compound rest, new, complete.  
12 in. x 5 ft. Reed engine lathe.  
12 in. x 6 ft. Star q. c. g. tool room lathe, new, complete.  
14 in. x 5 ft. Hendy quick change gear tool room lathe, comp. r., with oil pan.  
14 in. -16 in. x 6 ft. Hamilton, q. c. of feed, eng. lathe, nearly new.  
15 in. x 6 ft. American b. g. Fox Monitor lathes, chasing bar, swivel, offset and lever feed, turret, (2).  
16 in. x 5 ft. Jones & L. pln. hd. Monitor, 1 3-16 in. hol. sp., dbl. fr. c. s.  
18 in. x 6 ft. Bradford eng. lathe, nearly new.  
24 in. x 12 ft. American modern heavy type eng. lathe, taper attachment, in A No. 1 condition, 20 in. chuck.  
28 in. x 10 ft. Putnam heavy eng. lathe, fine running order.  
10 in. x 4 ft. Schulz spinning lathe, with relieving attachment, complete.  
1½ x 32 in. heavy polishing lathe and countershaft.

#### SCREW MACHINES.

No. 1 B. & S. ½ in. w. f. cap. semi-automatic hand screw machine, fine order.  
No. 140 Wells ½ in. w. f. cap., A No. 1 condition.  
No. 5 Windsor, 2 in. w. f. cap., g. f. h., complete, overhauled.  
2½ in. bar cap. Foster flat turret lathe, complete, bar equipment, nearly new.

#### NEW MILLING MACHINES.

No. 1 Rockford hand miller, new, complete.  
No. 3½ Fox power feed miller, new, complete.  
No. 1½ Rockford plain power feed miller, new, complete.

#### SHAPERS.

14 in. Rockford s. g. crank, new.	16 in. Am. s. g. crank, slightly used.
16 in. Rockford s. g. crank, new.	20 in. S. & M., b. g. crk., slightly used.
16 in. Rockford b. g. crank, new.	20 in. Rockford b. g. crank, new.

#### MISCELLANEOUS.

Arbor press on stand, No. 3½ Greenard.  
Boring machine, vert. cyl., No. 2 Underwood, 25 in. power travel to bar.  
Cold sawing machine, 12 in. Burke.  
Grinder, comb. drill, cutter and reamer and surface. Wilmarth & M. Bx.  
Motor, var. spd., 3 h. p. Gen. Elect. 230 v., d. c., 650-950 r. p. m.  
Pipe machine, 4 in. Merrill, portable, hand and power.  
Planer, 48x48 in. x 8 ft. Fitchburg, 2 heads on rail.  
Punch press, No. 18C Bliss, 800 lbs., o. b. i.  
Punch press, No. 119 Crosby, 1800 lbs., open back.  
Punch press, No. 2 Stiles, 1800 lbs., solid back.

Many other machines of various kinds, all fully described in our new list—just out. Write for copy. Will buy your machinery or entire shop. Our motto is "Satisfaction Guaranteed."

## SECOND-HAND MACHINERY

### FOR SALE BY

Joseph T. Ryerson & Son, - 16th and Rockwell Sts., Chicago

#### POWER PUNCHES.

Item.	
H852	Whiting 18 in. quick acting punch, capacity $\frac{1}{2}$ x $\frac{1}{2}$ in.
H853	Whiting double end, 15 in. throat, capacity $\frac{1}{2}$ x $\frac{1}{2}$ in.
H841	Badger 50 in. punch and stake riveter, capacity $\frac{1}{2}$ in. rivet, punch $\frac{1}{2}$ x $\frac{1}{2}$ in.
H287	Cleveland 90 in. mul. punch, cap. thirty 13-16 in. holes in $\frac{1}{2}$ in.
H638	Kraut steel plate double end 24 in. punch, capacity 1x1 in.

#### PLANERS.

H814	Gray, 24x24x6, 1 hd., belt.	H167	Sellers, 42x42x6 $\frac{1}{2}$ , 2 hds.; b. dr.
H215	Gray, 36x36x10, 2 hds.; motor.	H169	Sellers, 42x42x8 $\frac{1}{2}$ , 2 hds.; b. dr.
H158	Pond, 26x26x6, 1 hd.; belt d.	H664	Pond, 36x36x10, 2 hds.; b. dr.
H163	Sellers, 36x36x7, 1 hd.; belt d.	H785	Miles, 30x30x15, 1 hd., belt'd.

#### LATHES.

H838	Putman 32 $\frac{1}{2}$ x16, heavy pattern.
H843	Cincinnati 16x8, hollow spindle, d. b. g., comp. rest.
H717	Prentice 26x12 d. b. g., hollow spindle, compound rest.
H767	11x3 $\frac{1}{2}$ speed lathe, turret slide, cut-off slide.
H720	Jones & Lamson 2x24 turret lathe.
H744	Springfield Fox 18x6, turret on bed.
H804	LeBlond 14x8 hollow spindle, compound rest.
H506	Gisholt 28 in. turret, 3 $\frac{1}{2}$ in. hole in spindle.
H507	Gisholt 34 in. turret, 4 $\frac{1}{2}$ in. hole in spindle.
H847	Flather 15x8, q. c. g., hollow spindle, compound rest, chuck.

#### DRILLS.

H832	Dwight-Slate 4 sp. sensitive.	H610	Dallett No. 3, port. rope drive.
H516	Barnes, 26 in. adj. head.	H517	Snyder, 25 in. adj. head.

#### SHAPERS.

H839	Cincinnati 24 in. crank.	H803	Hendey 24 in. friction.
H511	Hendey 15 in., friction.	H810	Walcott 26 in. friction.
H512	Smith & Mills, 15 in. crank.		

#### PNEUMATIC RIVETERS.

H615	Allen 34 in. reach, 14 in. gap, capacity 1 in. rivets.
H605	Albree toggle, 26 in. reach, capacity 1 in. rivets.
H491	Hanna patented lever; 25 in. reach; 15 in. gap; capacity $\frac{1}{2}$ in. rivets.

#### MILLING MACHINES.

H665	Ingersoll, slab 36x36x8.	H658	Lincoln type, 6x26 in.
H636	Garvin No. 4 plain, 3 feeds.	H782	Cincinnati No. 2 plain.
H788	LeBlond No. 4 plain.	H737	Kemp Smith No. 2 plain.

#### MISCELLANEOUS.

H808	Boring machine, horizontal, No. 2 Binsse.
H213	Boring and drilling machine, horizontal, 4x27x60 in., Beaman & Smith.
H840	Centering machine, D. E. Whiton, revolving type.
H555	Compressor, Ingersoll-Rand, 10x10 in., with unloader.
H811	Cutter and reamer grinder, No. 3 Brown & Sharpe.
H672	Cutting-off machine, 3 in. Hurlburt & Rogers.
H812	Grinder, No. 1 Landis universal, range 9x24.
H837	Keyseater, No. 1 Colborn.
H208	Profiling machine, No. 2 Pratt & Whitney.
H840	Revolving centering machine, Whiton.
H647	Screw machine, hand, $\frac{1}{2}$ in. Pratt & Whitney.
H541	Screw machine, 1 in. Cleveland automatic.
H834	Screw machine, No. 2 Pratt & Whitney.
H623	Tapping machine, No. 1 Garvin automatic.

## SECOND-HAND MACHINERY

### FOR SALE BY

**C.C. Wormer Mach'ry Co., 94-96 W. Woodbridge St., Detroit, Mich.**

#### SPECIAL LATHES.

52 in. pulley facing, Stevens.  
60 in. Stevens pulley lathe.  
7x31 Stark bench lathe.  
21x8 Le Blond, chucking.

3x36 J. & L. chucking turret.  
14x11 single head axle.  
20x7 L. & D. chucking lathe.  
28x8 metal spinning lathe.

#### BOLT CUTTERS

1 in. National, quick opening.  
No. 5 Schlenker, 3 die.

No. 12 Wells Bros.  
1 to 1 1/2 in. Mayo.

#### SHAPERS.

20 in. Cincinnati, bk. gd. crank.  
24 in. Steptoe, geared rack.

24 in. Lodge & Davis, geared rack.  
24 in. Hendy, geared rack.

#### PLANERS.

20x19x4 New Haven.  
20x20x4 Wheeler.  
22x22x4 Wheeler.  
22x2x5 Pond.  
24x24x6 Hendy.  
24x24x7 New Haven.

26x27x6 Wheeler.  
28x28x6 Pond.  
28x28x7 power feed.  
30x30x14 Miles.  
36x36x12 Fitchburg.  
16 in. Niles boiler plate.

#### MILLERS.

No. 2 Cincinnati, plain.  
No. 4 1/2 Brainard, plain.  
No. 2 Fox, hand.  
No. 2 Davis & Egan, plain.  
No. 0 Le Blond, plain.

2 spindle, Beman & Smith.  
No. 7 Brainard, Lincoln type.  
No. 1 Cincinnati, plain.  
No. 1 1/2 Hendy Norton, plain.  
No. 59 Bement & Dougherty, plain.

#### PIPE MACHINES.

No. 1 Apex, 1/2 to 2 in.  
4 to 6 in. Curtis, power.  
110 Forbes, power.  
No. 9 Merrill, hand power.

1 to 4 in. Armstrong, power.  
No. 9 1/2 Merrill, hand and power.  
No. 1 Williams, 1/2 to 2 in.  
No. 2 Peerless, power.

#### HAMMERS.

40 lbs. Bradley, helve.  
30 lbs. Koch, belt driven.  
125 lbs. Bradley, strap.

150 lbs. Morgan, steam.  
250 lbs. Ferris & Miles, steam.  
1000 lbs. board lift.

#### HACK SAWS.

45 degrees, angle power.  
5x5 Millers Falls, power.

No. 1 1/2 Paragon cold saw.  
4x4 Goodell & Pratt.

#### FURNACES.

No. 18-A Acme, gas.  
No. 6 Stewart, case hardening, with blower and pyrometer.

No. 6 American, soft metal.  
Hinz forge and gas oven.  
National oil furnace.

#### FANS AND BLOWERS

No. 1 American volume, 5 in. outlet.  
45 in. Sturtevant exhauster.  
25 in. outlet shavings exhauster.  
No. 7 Sturtevant exhauster.  
40 in. Sturtevant exhauster.

No. 5-V ABC volume.  
50 in. Sturtevant exhauster.  
70 in. Sturtevant exhauster.  
60 in. Buffalo exhauster.  
60 in. Fuller vent. fan.

#### AIR COMPRESSORS.

No. 14-C 8x14x12 Marsh, steam.  
16x14x16 Marsh, steam.  
6x9 Clayton, belt.  
8x8 Curtis, geared drive.  
No. 0 3 cyl. Spacke, belt.

6x6 Curtis, belt.  
6x6 Snider-Hughes, belt.  
6x6 Bury, belt.  
8x8 American, belt.  
6x6 Gardener, duplex.

#### MISCELLANEOUS.

Belt, 85 ft. of 24 in. rubber.  
Boring mill, No. 0 Barrett.  
Boring mill, 34 in. King, vertical.  
Bulldozer, No. 0 Williams.  
Countershafts, 50 sizes.  
Friction clutch, 36x16 in.  
Gas engine, 7x14 Springfield.  
Gear cutter, No. 1 Slate, auto.  
Generator, 7 1/2 k. w., 125 v.  
Grinder, crank, No. 24 Landis.  
Grinder, cylinder, No. 60 Heald.  
Grinder, disc, No. 14 Gardener.

Grinder, ring, No. 210 Heald.  
Hoisting engine, 6x8, dbl. cylinder.  
Motor, 10 h. p., 220 volt.  
Motor, 10 h. p., Crocker-W.  
Motor, 15 h. p., Lundell.  
Press, No. 2 Stiles, open side.  
Press, No. 5 Stiles, stamping.  
Riveter, 3-16 in. Shuster, elastic.  
Scale, 30,000 lbs. Fairbanks, hopper.  
Separator, oil and metal.  
Slitting shear, No. 205 Niagara.  
Tire welder & shear, No. 4 L. & A.

## SECOND-HAND MACHINERY

### FOR SALE BY

**The Lake Erie Nail & Supply Co., (Machinery Dept.)**  
**408-412 Frankfort Ave., N. W. Cleveland, Ohio**

#### LATHES.

- |   |   |
|---|---|
| 14 x 6 Bradford, hollow spindle, comp. rest, taper and chuck.         | 18 x 36 in. x 8 ft. Fay & Scott gap, with turret.         |
| 14 x 6 Monarch, comp. r., h. s., (2).                                 | 18 x 8 Draper, c. r., hollow spindle.                     |
| 14 x 6 Feather, chuck and taper att.                                  | 18 x 12 Lodge & Davis, compound, hollow, taper and chuck. |
| 16 x 6 Johnson, comp. r., h. s., (2).                                 | 24 x 16 Gleason, plain rest, chuck.                       |
| 16 x 8 Bradford, dbl. back gd. chuck.                                 | 36 x 22 Sellers, triple geared.                           |
| 16 x 8 W. P. Davis, hollow s. & ck.                                   | 24 x 36 Fitchburg gap lathe.                              |
| 17 x 10 Fay & Scott, hollow spindle, compound rest, turret on shears. |   |

#### TURRET LATHES.

- |   |                             |
|---|-----------------------------|
| No. 3 Bardons & Oliver, auto. chuck, cut off rest, (3). | 22 in. Bullard, complete.   |
| 16 in. Springfield Fox lathe.                           | No. 3 Pratt & Whitney, (5). |

#### SHAPERS.

- |                       |                         |
|-----------------------|-------------------------|
| 16 in. Barker, crank. | 21 in. American.        |
| 20 in. Hamilton.      | 24 in. Rockford, crank. |

#### DRILLS.

- |   |   |
|---|---|
| 10 in. Burke, bench, (3).                                   | Gardam, multiple spindle (2).                 |
| 14 in. Miami Valley, sensitive.                             | Foots-Burt, multiple spindle.                 |
| 36 in. Baker Bros., complete.                               | 34 in. W. F. & J. Barnes, sliding head drill. |
| 30 in. Midland high speed radials, tapping attachment, (2). |   |

#### PLANERS.

- |                               |                               |
|-------------------------------|-------------------------------|
| 23 x 33 x 10 Putnam, 1 head.  | 60 x 60 x 16 Putnam, 2 heads. |
| 48 x 48 x 29 Belmar, 4 heads. |                               |

#### MILLING MACHINES

- |                            |  |
|----------------------------|--|
| No. 20 Oesterlein, plain.  | No. 20 Oesterlein plain universal, dividing head, vertical attachment. |
| No. 2 Grand Rapids, plain. |  |
| No. 12 Garvin, plain.      |  |

#### NUT TAPPERS AND BOLT CUTTERS.

- |  |  |
|--|--|
| 4 in. Acme 6-spindle nut tappers, (2). | 14 in. Acme single spindle bolt cutter, motor drive. |
| 1 in. Acme 6-spindle nut tapper.       |  |
| 2 in. Acme 3-spindle bolt cutter.      |  |

#### PRESSES.

- |                         |                           |
|-------------------------|---------------------------|
| No. 6 Ferracute, plain. | No. 20 Bliss, inclinable. |
| No. 734 Bliss, plain.   | No. 21 Bliss, inclinable. |

#### MISCELLANEOUS.

- |  |  |
|--|--|
| Band saws, metal, Thompson, countershaft, (2). | Gear cutter, spur, 30x8 Gould & Eberhardt, auto. |
| Broaching machine, No. 3171 Waterbury Farrel.  | Grinder, angle and face.                         |
| Cut-off saw, 6 in. Challenge.                  | Hack saw, Victor.                                |
| Gas engine, 6 h. p. Buckeye.                   | Keyseat miller, Ingersoll.                       |
| Gas engine, 10 h. p. New Era.                  | Pipe machine, 4 in. Oster.                       |
| Gas engine, 15 h. p. Kenton.                   | Shear, rotary, No. 387 Toledo.                   |
| Generator, 60-light Koles, d. c.               | Squaring shear, 37 in. Toledo. No. 11 gauge.     |

#### COMPLETE SHOP EQUIPMENT.

Complete machine shop equipment at a bargain. Entire plant of the Mann Indicator Co., Bankrupt, Alliance, Ohio, for sale.

- Band saw, 22 in. Crescent.  
 Cold saw, No. 11 Higley, with grinder.  
 Drill, 6-spindle gang, 21 in. Hoefler, complete.  
 Drill, 21 in. Hoefler, complete, tapping attachment.  
 Drill, 14 in. Henry & Wright, high speed.  
 Gear cutter, spur, Standard automatic, bench.  
 Grinders, universal, Thompson, motor drive. (2).  
 Grinder, universal, Greenfield, complete, almost new.  
 Grinder, wet tool, 24 in. Leland.  
 Grinders, double end, 14 in. Vulcan, (3).  
 Grinder, double disc, 16 in. Ransom.  
 Lathes, 14x6 American, quick change, chuck, almost new, (2).  
 Lathe, 14x6 American, quick change, chuck, and taper att., almost new.



## SECOND-HAND MACHINERY

### The Lake Erie Nail & Supply Co.—Continued.

Lathe, 15x6 Prentiss tool room, chuck and taper.  
Lathe, 20x8 Walcott & Wood, hollow spindle.  
Magnet winding lathes, high speed, (2).  
Paper slitter, gang, 40 in. Jaques.  
Squaring shears, 40 in. Niagara.  
A large number of hand tools, time clock, watchman's clock, leather belting, pulleys, motors and supplies.  
Must act quick if interested.

### FOR SALE BY

**Chas. A. Strelinger & Co., Bates & Congress Sts., Detroit, Mich.**

Drills, 4-spindle gang, 23 in. Rockford, (3).  
Drills, 22½ in. Kern, complete.  
Drills, 25 in. Kerr, standard, sliding head.  
Drills, Kern, practically new.  
Jointer, Oliver.  
Lathe, 16 in.x8 ft. Wolcott, geared feed.  
Lathe, 20-24 in.x8 ft. Blaisdell, taper attachment.  
Miller, plain, No. 3 Owen.  
Planer, 36x36 in.x12 ft. Whitcomb, motor drive.  
Saw table, small.  
Turret lathes, 14 in. Foster-Kimball, plain head, (3).

### FOR SALE BY

**Western Machinery Co., 6th and Baymiller Sts., Cincinnati, Ohio.**

#### RADIAL DRILLS.

Three 4-foot Universal Radial Drill Co. plain radial drills, tables considerably drilled, machines otherwise in very fair condition, which we will sell for \$275. each cash, f. o. b. cars Cincinnati if moved at once. Photograph on application.

#### MISCELLANEOUS.

Boring mill, vertical, 7 ft. Hammer, steam, 450 lbs. Bell.  
Drill presses, upright, large stock. Turret machinery.  
Large stock of Lathes, Planers, Shapers and other machine tools and machinery. Send us list of your requirements.  
We will take in trade, or pay cash for good machine tools.

### FOR SALE BY

**The Osborne & Sexton Machinery Co., Columbus, Ohio.**

#### LATHES.

16x6 hol. spdl., comp. rest, (3). 18x8, 10 & 12 Hamilton, h. s., c. r.  
16x10 Mueller, comp. rest, hol. spdl. 20x8&10 Hamilton, cab. legs, h.s., c.r.

#### PLANERS AND SHAPERS.

14 in. Hendy. 20x20x4 Industrial, single head.  
24 in. Gould & Eberhardt. 24x24x6 Lodge & Davis, agl. hd.  
24 in. Queen City. 48x48x30 Belmer, 4 heads.

#### MISCELLANEOUS.

Boring mills, 8 & 9 ft. Betts. 3 hds. Miller, Grand Rapids No. 1, plain.  
Drill, 24 in. Cincinnati, sta. head. Presses, foot, No. 1 Consolidated (3).  
Drill, 4 spdl. Foote-Burt. Presses, inc., Etna No. 11 and 12.  
Gas engines, 10, 15, 25, 40 & 60 h. p. Press, No. 73½ Bliss.  
Gas furnaces, Chicago, (2). Punch and shear, 18 in. single end.  
Grinder, surface, Garvin. Pyrometer, Hoskins electric, new.  
Grinder, wet tool, No. 3 Safety. Shovel blanking rolls, Toledo.  
Hammers, drop, 300, 600 and 3,000 lbs. Slitting shear, Long & A. ½ in. plate.  
Hammers, helve, Schatz & Dayton. Threading mches., Webster & P., (2)

## SECOND-HAND MACHINERY

### FOR SALE BY

**Niles-Bement-Pond Company, 111 Broadway, New York.**  
**Located at Chicago, Boston and New York.**

#### LATHES.

13x6 P. & W., r. & f. taper.  
 14x5 American, brass, Fox att.  
 16x8 P & W., r. & f.  
 18x6 Blaisdell, r. & fall.  
 18x6 Pond, turret tool post.  
 18x7 Pond, turret tool post.  
 18x8 Pond, comp. r.  
 20x8 old style P. & W.  
 20x10 Flather, c. r.

22x12 Niles, with taper.  
 24x16 Niles, c. r.  
 24x24 3 tool shafting, Flather  
 26x22 Niles, c. r.  
 30x14 Niles, c. r.  
 36x18 Niles, c. r.  
 42x22 Niles, comp. r., tri. grd.  
 42x32 Putnam, comp. r., tri. grd.  
 48x16 Bement, comp. r., tri. grd.

#### SCREW MACHINES, TURRET LATHES, ETC.

No. 3, 2 15-16 in. Niles screw mche.  
 2x24 Jones & Lamson, cone head.  
 24x26 P. & W. turn table turret, 220 v,  
 motor dr., bar and chuck outfit.  
 21 in Gisholt, turret.  
 24-27 Conradson semi-automatic tur-  
 ret, 2 3-16 in. hol. sp.  
 28 in. Milwaukee turret, 4 in. hol. sp.  
 4 in. Hartford automatic pin machine.

4 in P. & W. automatic screw mach.  
 4 in. P. & W. 2 sp. automatic screw  
 machine.  
 4 in. Acme old style 4-sp. automatic.  
 4 in. single turret Spender automatic.  
 14 in. Gridley 1-sp. automatic.  
 21-32 in. No. 2 Brown & Sharpe auto-  
 matic screw machine.

#### BORING MACHINES.

30 in. tur. hd. b. & t. mill, Colburn.  
 50 in. Niles pulley borer.  
 56 in. Niles b. & t. mill, 2 heads.  
 7 ft. Pond b. & t., 2 heads.  
 8 ft. Michaels b. & t., 1 head.  
 10 ft. Pond b. & t., 2 heads.  
 2 in. sp. Kelly hor. bor. and drill.

Bement cylinder borer, 7 1/2 in. bar for  
 26x78 or smaller cylinders.  
 96 in. swing x10 ft. centers bor. & fac-  
 ing; weight: about 43,000 lbs.  
 5 in. diam. spindle Niles floor bor-  
 ing, drilling and milling machine.

#### PLANERS.

17x17x4 Whitcomb.  
 22x22x6 Harrington.  
 24x24x6 Ohio.  
 26x26x7 Niles, heavy type.  
 26x26x16 Miles, 2 hds.  
 30x30x11 Niles, 1 hd.  
 30x30x6 Pond, 1 hd.  
 30x30x24 Sellers, 2 hds.  
 32x32x12 Pond, 2 hds.  
 32x32x14 Pond, 2 hds.  
 36x36x20 Pond, 3 hds.

40x40x26 Pond, 4 hds.  
 42x42x12 Woodward & P., 4 hds.  
 42x42x20 Miles, 3 hds.  
 48x48x16 Pond, 4 hds., heavy, 220 v.  
 motor.  
 48x48x20 Sellers, 3 hds.  
 50x50x18 Gleason, 2 hds.  
 62x62x20 Pond, 4 hds.  
 86x86x30 Pond, 4 hds.  
 86x86x35 Pond, 4 hds.  
 96x96x16 Powell, 4 hds.

#### UPRIGHT AND SENSITIVE DRILLS.

13 in. 1 sp. sensitive, motor d., 110 v.  
 10 in. 2 sp. sensitive, Slate.  
 10 in. 3 sp. sensitive, Slate.  
 10 in. 3 sp. sensitive, Signourney.  
 2 spindle double column sensitive,  
 Langelier.  
 17 in. 4 sp. gang, Jones & L.  
 18 in. stationary hd., plain, Niles.

28 in. sliding head, Pond.  
 30 in. sliding head, Putnam.  
 36 in. sliding head, Gould & E.  
 48 in. sliding head, Niles.  
 10 sp. adjustable R. & W., capacity  
 1 1/2 in. holes in 37 in. circles, belt or  
 motor; weight: 30,000 pounds.

#### RADIAL DRILLS.

24 ft. semi-radial, Hiles & J.  
 44 ft. semi-radial, Barr.  
 4 ft. Niles, plain.  
 4 ft. Niles, univ.  
 5 ft. Niles, plain.  
 5 ft. plain, belt or motor, Pond.

5 ft. 6 in. universal, Niles.  
 6 ft. univ., Niles.  
 6 ft. plain, belt or motor, Pond.  
 6 ft. 10 in. semi-universal, Niles.  
 7 ft. 6 in. full universal, Niles.  
 Univ. portable radial, Prentice.

#### MILLERS AND GEAR CUTTERS.

No. 2 hand P. & W., 16x7 table.  
 24x7 table, plain, Becker.  
 43x9 1/2 No. 3 Cincinnati plain, b. g.  
 No. 2 universal L. Blond.  
 Single sp. profiler, 21x24 in. table,  
 Garvin.

No. 3 univ., old style, Cincinnati.  
 6x14 thread miller, P. & W.  
 24 in. spur gears, Gould & E.  
 36 in. spur gears, Pond.  
 72 in. spur gears, Niles.  
 84 in. spur gears, Niles.

## SECOND-HAND MACHINERY

### Niles-Bement-Pond Company—Continued.

#### SHAPERS.

10 in. crank shaper, Miles.  
12 in. crank shaper, Bement.  
16 in. sing. gear crank, Gould & E.  
18 in. double trav. head, Cincinnati.  
18 in. crank shaper, Bement  
32 in. triple grd. rack, Cincinnati.

#### RAILROAD MACHINERY.

48 in. car wheel borer, Niles.  
42 in. car wheel lathe, Niles, belt or motor.  
48 in. car wheel lathe, Bement.  
70 in. single dr. wheel lathe, Sellers.  
Niles double axle lathe.  
90 in. extra heavy wheel lathe, Niles, motor.  
Bement double axle lathe.  
Putnam double axle lathe, ex. heavy.  
48 in. 150 ton wheel press, Niles.

#### MISCELLANEOUS.

Bolt cutter, 1 in. Standard.  
Bolt header, 2 in. Blakeslee.  
Cut-off machines, 2½ in. Betts.  
Cut-off machine, 4½ in. Starr.  
Cut-off saw, bar 16 in. diam.  
Grinder, drill, 3 in. Sellers.  
Grinder, wet, 20 in. Blount.  
Punch & shear, dbl., Hilles & J.  
30 in. throat, motor, cap. 1½ in 1½ in.  
Keyseat miller, Burr, horizontal and vertical spindles, table 6 ft. long, arranged for motor.  
Punch, horiz., No. 4 Hilles & J.  
12 in. throat, motor, capacity 15-16 in 1½ in.  
Steam hammers, 600 lbs. Bement.  
Steam hammers, 1500 lbs. Morgan.  
Tire bending rolls, 4 in. diam.

### FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

210-212 Washington Ave.

St. Louis, Mo.

#### LATHES.

14x6 Bradford.  
16x8 Lodge & Davis.  
16x7 Pratt & Whitney.  
26x16 Niles.  
36x12 fair condition.  
48x40 double head, column facing.

#### MILLING MACHINES.

No. 1½ Brown & Sharpe, universal.  
42x36 in. x9 ft. Ingersol slab miller, horizontal spindle.

#### AIR COMPRESSORS.

8x8 Curtis, belted.  
10x12 Curtis, belted.  
10x10x10 steam driven.  
90 cu. ft. Norwalk.  
10x12x10 steam driven.  
14 and 9x8 compound belted.  
11x11x12 Westinghouse.

#### GASOLINE ENGINES.

20 h. p. Jacobson.  
20 h. p. Fairbanks-Morse.  
32 h. p. Fairbanks-Morse.  
35 h. p. St. Marys.

#### STEAM ENGINES.

6 h. p. vertical.  
8x8 vertical.  
Pair 13x16 Brownell, on one shaft.  
10x20 Atlas.  
14x24 slide valve.

#### STEAM PUMPS.

7x4½x10 Laidlaw-Dunn.  
8 and 12x8x12 Smith-Vaille.  
16 and 26x12x18 Gordon, compound.  
22x14x24 Dean.

#### MISCELLANEOUS.

Air tanks, (2).  
Band Saw, 36 in.  
Belting, 60 ft. 12 in. double leather.  
Bending rolls, 7 in. dia., 8 ft. long.  
Blower, No. 10 Buffalo.  
Blower, positive pres., 2½ in. outlet.  
Bolt cutter, 3½ in., quick opening hd.  
Bolt cutter, Wells.  
Bolt header, 1 in.  
Boring mill, vertical, 4 ft.  
Drill, 3 spindle sensitive.  
Drill, 6 spindle quint.  
Gas furnace, Chicago.  
Grinder, twist drill, American.  
Hammer, strap, 30 lb. Bradley.  
Hammer, vacuum, 80 lb. Yeakley.  
Hammer, 400 lb. Yeakley.  
Keyway cutter, Morton, cap. 2 in.  
Miller, universal, No. 1 Brown & S.  
Pipe mche., 8 in. Bignall & Keeler.  
Pipe mche., 12 in. Bignall & Keeler.  
Riveter, pneumatic, 48 in. reach.  
Screw machines, Garvin No. 1.  
Splitting shear, 48 in. cap., 1 in. plate.  
Squaring shears, power, 42 in.  
Traveling crane, 10 ton, 21 ft. span.

## SECOND-HAND MACHINERY

### FOR SALE BY

**W. L. Perkins, Jr.**

**30 Church St., New York**

#### LATHES.

12x5 Reed, plain, rise and fall rest.  
16x6 Flather, plain rest, hol. spindle.  
16x8 Porter, c. r., hollow spindle.  
18x8 Hendey, c. r., hollow spindle.  
18x8 Reed, stud lathe.

22x10 Harrington, c. r.  
28x12 Prentiss, c. r.  
28x16 New Haven, c. r.  
30x15 Sellers, c. r.  
48x12 Harrington, c. r.

#### SHAPERS—PLANERS.

12 in. Sellers, double trav. heads.  
15 in. Kelley, single geared crank.  
16 in. Springfield, single gd. crank.  
20 in. Smith & Mills, sgl. gd. crank.  
24 in. Walcott, single geared crank.

17x17x32 Bement, crank.  
20x20 4 Pease, single head.  
26x26 6 Putnam, single head.  
32x32 8 Pond, double head.  
37x37x26 Miles, two heads.

#### MISCELLANEOUS.

Band saw sharpener, automatic.  
Boring mill, horiz., No. 2 Bement.  
Boring mill, vertical, 42 in. Bullard.  
Flat turret, 2x24 in. Jones & Lamson.  
Miller, univ., No. 1 Cin'ti, pl. hd.  
Radial, plain, 5 ft. Prentice.  
Screw machine, 1 in. Meriden.

Screw mch., 1 1/2 in. Nat.-Acme, auto.  
Screw mch., 1 1/2 in. Pratt & Whitney.  
Slotter, 12 in. Sellers, all feeds.  
Turret lathe, brass, 13x6 American.  
Turret lathe, 1 in. Bardons & Oliver.  
Turret lathe, 24 in. American.  
Valve miller, No. 1 Newton.

### FOR SALE BY

**A. D. White Machinery Co.,**

**108-114 N. Jefferson St., Chicago**

#### LATHES.

13x6 LeBlond, c. r.  
15x6 Schellenbach, q. c. (2).  
16x6 Lodge & Shipley, q. c., ck.  
18x8 Rahn-Carpenter.

18x8 American, latest pat.  
20x10 Fay & Scott, c. r.  
24x12 Fay & Scott, like new.  
30x10 Powell.

#### DRILLS.

3 spindle Baker.  
24 in. Blaisdell.  
28 in. Bickford, sliding head, (4).  
28 in. Aurora, sliding head.

30 in. Kerkhoff, sliding head.  
30 in. Bickford, sliding head.  
32 in. Bickford, sliding head.  
3 ft. Bickford radial, cheap.

#### PLANERS.

24x 6 Gray, 1 head (2).  
24x 6 Pond, 1 head.  
25x 6 Sellers, spiral drive.  
26x 6 Gray, 1 head.  
26x 8 Gray, 1 head (2).  
28x 8 Gray, 1 head (2).

32x8 Betts, 1 head.  
36x10 Gray, 2 heads.  
36x12 Cincinnati, 2 heads.  
38x10 Gray, 1 head, fine.  
52x25 Betts, 1 head.

#### SCREW MACHINES AND TURRET LATHES.

16 in. No. 3 Pearson screw machine.  
No. 2 1/2 Pratt & Whitney sc. mche.  
No. 3 Pratt & Whitney sc. mche.  
7 in. Cleveland, automatic.  
7 in. Pratt & Whitney, automatic (4).  
7 in. Cleveland, semi automatic.

3 in. P. & W., automatic.  
13 in. Dreeses turret lathe.  
16x5 Flather turret lathe.  
18 in. Dreeses turret lathe.  
18 in. D. & E., fr. hd., 2 step cone.  
5 1/2 in. belt turret lathe.

#### PUNCH PRESSES.

No. 2-A R. & K., inclinable.  
No. 2 R. & K., o. b. i. (6).  
No. 5 R. & K., o. b. i.  
No. 19 Bliss inc., (2).

No. 58 Toledo, 6 in. stroke.  
No. 53 Ferracute, solid back.  
No. 68 N. Bliss, double action.

#### MISCELLANEOUS.

Boring and facing machine, No. 1 Beaman.  
Die slotter, Garvin, like new.  
Gear cutter, No. 13 B. & S.  
Grinder, cutter, H. G. Barr.  
Hammer, power, 35 lb. Justice.  
Hammer, power, 50 lb. Dienelt.  
Hammer, drop, 200 lb. Norton.

Hammer, 2,000 lb. American.  
Keyseater, No. 2 Catlin.  
Keyseater, 16 in. Morton.  
Miller, No. 1 B. & S. universal.  
Miller, No. 1 Kempsmith, univ., g. l. d.  
Pipe machine, 6 in. Curtis.  
Shapers, 16 in. Smith & Mills (2).  
Shaper, 18 in. Henderson, b. g.

Are getting out new list, with prices that will surprise you. Write for it.

## SECOND-HAND MACHINERY

### FOR SALE BY

**J. J. McCabe,**

**30 Church St., New York City.**

#### PLANERS.

All sizes. From 16 in. to 120 in. in width.

120 in. x 18 ft. Betts, 4 heads.  
72x72x14 Niles, motor drive, 4 heads.  
70x70x24 Wm. Sellers, spir. grd., 4 hds.  
48x48x14 Sellers.  
42x42x14 Pond.  
36x36x12 Gray, 2 heads.  
36x36x10 Bement-Miles, 2 heads

36x36x10 Pond, 1 head.  
36x36x 8 Pond, 2 heads.  
32x32x 8 Gray style, 2 heads.  
27x27x 8 Woodward & Powell, 1 hd.  
24x24x 8 Pratt & Whitney.  
16x16x3½ Bridgeport.

#### LATHES.

384 in. swing, heavy, triple-gearcd,  
8-00 x 20 ft. McCabe's dble. spdl.  
56x16 Putnam.  
54x21 Fitchburg.  
52x28 Putnam.  
50x18 Fitchburg.  
48x24 Pond.  
42x16 Putnam.  
38x26 Fifeid.  
36x18 Betts, heavy, triple geared.

30x15 Pond.  
28x15 New Haven.  
26x18 New Haven.  
26x14 Prentice, with taper attach.  
25x12 Putnam.  
22x12 Draper.  
22x 8 Reed, double back gears.  
21x12 Schumacher & Boye, double  
back gears.  
18x10 Schumacher & Boye, q. c. g.

#### UPRIGHT BORING MILLS.

14-20 ft. swing Niles, extension type,  
double head motor drive.  
10 ft. swing Pond, 2 heads complete.  
7 ft. swing Sellers, 2 heads.  
7 ft. swing Sellers, 1 head.  
6 ft. swing Pond, 1 head.

3½ ft. swing Bullard, 2 heads.  
3 ft. swing car wheel borer, Baker  
Bros.  
3 ft. swing Bullard, 2 heads.  
3 ft. swing Bullard, 1 head.  
2½ ft. swing Bullard, turret head.

#### RADIAL DRILLS.

7 ft. arm half universal, Prentiss.  
5½ ft. arm Niles, plain.  
5 ft. arm full universal, Niles.

4 ft. arm speed box Prentiss Bros.  
4 ft. arm Niles, half universal.

#### OTHER DRILLS.

14 spindle Baush, speed box.  
8 spindle Western.  
4 head multiple, hvy. pattern. Niles.

50 in. upright Harrington, latest.  
42 in. Prentiss Bros., complete.  
36 in. Snyder.

#### TURRET LATHES.

22 in. Gisholt, heavy pattern.  
24 in. Gisholt, with 2 carriages.

22 in. Potter & Johnston, double tur.  
2x24 Jones & Lamson, regular style.

#### MILLING MACHINES.

Vertical, Brown & S., table 53x16.  
Planer type, table 30x9 ft., Niles.

Manufacturers style, table 58 in.,  
Newton.

#### SLOTTERS.

16 in. stroke Bement Miles.  
13 in. stroke Bement Miles.

12 in. stroke Sellers.

#### HORIZONTAL BORING AND DRILLING MACHINES.

No. 1 horiz. floor borer, driller and  
tapper, Beaman & S., 3 in. bar.

2-13-16 in. knee type, Bement.  
1½ in. bar, knee type, Garvin.

#### BOILER SHOP TOOLS.

48 in. throat punch & shear, single,  
Cleveland.

24 in. punch & shears, single, Clev'd.  
19 in. shear, Long & Allstatter.

36 in. throat punch & shear, single,  
Cleveland.

8 in. punch & shear, double, Long  
& Allstatter.

25 in. dbl., 25,000 lbs., Hilles & J.

10 ft. bending rolls, Bement.

#### STEAM HAMMERS.

700 lb. single frame, Bell.

400 lb. single frame, Erie.

#### GEAR CUTTERS.

36 in. spur and bevel, Gould &  
Eberhardt.

26 in. spur, Brown & Sharpe.

20 in. spur and bevel, Gould & F.

20 in. spur & spiral hobbing machine,  
Cleveland.

#### MISCELLANEOUS.

Cold saw.

Cutting-off machine, Pratt & W., 3 in.

Cutter grinder.

Keyseater, Morton No 2.

Cutting-off and centering machine,

Surface grinder, Walker, auto.

10 in. Bement.

## SECOND-HAND MACHINERY.

### FOR SALE BY

**Chas. Molitor Machinery Co., 215 S. Clinton St., Chicago, Ill.**

One lot heavy Construction Iron and Boiler Working Machinery, as follows:

Air riveter.	Compressors.
Beam shear.	Crane derrick.
Bolt and pipe threader.	Drop hammer.
Bulldozer.	Hammer.
Chain hoists.	Punches and shears, heavy.

And 100 other iron and woodworking machines, motors, etc., etc.

### FOR SALE BY

**McCoy & Brandt, 410 House Building, Pittsburg, Pa.**

#### LATHES.

18 in. x 10 ft. Prentice. 2 heads.	28 in. x 13 ft. - 6 in. New Haven.
21 in. x 10 ft. Johnston.	50 in. x 13 ft. Niles.
24 in. x 12 ft. Putnam.	60 in. x 27 ft. - 8 in. New Haven.
24 in. x 16 ft. Putnam.	66 in. x 18 ft. New Haven.

#### SHAPERS AND PLANERS.

24 in. Gould & Eberhardt.	60x60x16 Powell.
16 in. Smith & Mills.	96x96x16 Powell.
10 in. Putnam, sliding head.	24 in. Betts, rotary.
20 in. Pratt & Whitney.	36x36x8 Powell.

#### MISCELLANEOUS.

Billet shear, cap. 4 in., Lewis.	Generator, 60 k. w., Western Elec.
Boring mill, 36 in. Streit.	Hammer, 150 lbs. Jenkins.
Boring mill, 50 in. Niles.	Hammer, 800 lbs. Niles-Bement.
Crane, 10-ton Niles, electric.	Hammer, 5,000 lbs. Sellers.
Crane, 10-ton Shaw, electric.	Motor, 22 h. p. Triumph, 110 v., d.c.
Drill press, 24 in. Bickford.	Motor, 35 h. p. Western Electric,
Drill press, 24 in. Prentice.	110 v., d. c.
Drill press, 26 in. Barnes.	Ref. machine, 5-ton Cleveland.
Gas engine, 150 h. p. Bogart.	

### FOR SALE BY

**Colcord-Wright Machinery & Supply Co.**

**St. Louis, Mo.**

#### LATHES.

11 x 6 Rockford, c. r.	16 x 6 LeBlond, c. r.
12 x 5 Fairbanks, c. r.	16 x 8 Hendey, p. r.
14 x 6 Sebastian, c. r.	18 x 8 Rahn Carpenter, c. r.
14 x 6 Bradford, c. r., q. c.	20 x 6 Flather, p. r.
15 x 6 Von Wyck, c. r., turret on	22 x 8 Pond, c. r.
shear, (2).	32x10 New haven, c. r.

#### PLANERS AND SHAPERS.

15 x 15 x 36 New Haven.	30 x 20 x 8 Flather.
24 x 24 x 6 Gray.	14 in. Steptoe, crank.
24 x 24 x 6 Industrial.	

#### MILLING MACHINES.

Small B. & S., plain.	No. 13 Brainard, universal.
No. 21 Garvin, plain.	No. 144 Brainard, universal.
No. 25 Brainard, plain.	No. 14 Cincinnati, universal.
No. 134 Garvin, plain.	24x24 in. x 6 ft. Ingersoll, vertical.

#### BRASS WORKING MACHINERY.

10 x 4 Wells speed lathe.	15 x 5, square arbor.
14 x 5 hand, Fox, slide rest.	16 in. Dreesen, universal.

#### MISCELLANEOUS.

Blower, No. 2 Roots.	Hammer, power, 80 lb. Perfect.
Boring machine, hor., 4-sp. Newton.	Hammer, board drop, 200 lb. Toledo.
Cutter grinder, Cincinnati.	Pipe machine, 2 in. Jarecki.
Cutter grinder, Wells.	Press, C-2 Ferracute.
Drills, 26 in. Rockford, b. g., p. f.	Press, No. 35 Swaine.
Drill, plain radial, 4 ft. Dreesen.	Press, P-2 Ferracute.
Furnace, combination, Stewart.	Turret lathe, 2 x 24 J. & L.
Grinder, No. 3 Landis.	

## SECOND-HAND MACHINERY

### FOR SALE BY

**Rumely-Wachs Machinery Co., 121 N. Jefferson St., Chicago, Ill.**

#### LATHES.

9 in. Brown & S., univ. hand lathe.	18x8 LeBlond, turret on carriage.
10 in. LeBlond reducing, 16 ft. bed.	18x8 Walcott.
12x34 in. foot power speed lathe.	18x10 Wright.
14x6 Perkins.	18x12 Walcott, c. r.
15x6 Walcott, c. r., taper, relieving attachment.	20x8 LeBlond, dbl. fr. bk. gear. pwr. fd., tur. on shear, pan and pump.
15x6 Walcott, c. r.	20x10 LeBlond, p. f. tur. on shear.
16x6 Hendey.	20x10 LeBlond, q. c. g., c. r.
16x6 Porter.	20x14 LeBlond, standard, c. r.
16x6 Lodge & S., quick change gear.	24x8 Putnam.
16x6 LeBlond, standard.	24x10 LeBlond, standard.
16x6 Walcott, c. r. geared feed.	24x12 New Haven.
16x8 LeBlond, standard, motor dr., 220 volt, d. c.	24x24 Fifield.
16x10 LeBlond, standard, c. r.	28x12 New Haven.
16x10 Blaisdell.	36x14 Fifield.

#### UPRIGHT DRILLS.

3 spindle Reed.	24 in. Schumacher, complete.
4 spindle National turret.	26 in. Aurora, sliding head.
18 in. Baker Bros.	34 in. Barnes, sliding head.
20 in. Barnes, lever feed.	40 in. Lodge & D., sl. head.
24 in. Lodge & Davis, sliding head.	

#### RADIAL DRILLS.

2½ ft. arm Fostedick, plain.	3 ft. Bickford plain, cone driven.
3 ft. Fostedick, plain.	

#### PLANERS.

16 in. Lathe & Morse crank planer.	30x30x8 Whitcomb.
22x14x4 Pratt & Whitney.	30x30x8 Putnam.
22x22x5 Wheeler.	36x35x15 Powell.
24x24x5 Pease.	

#### TURRET LATHES.

1 in. Brown & S. auto screw mach.	18x6 Lodge & Davis, f. b. g.
No. 1 Pratt & W. screw machine.	18x6 Fox, square arbor.
1½ in. new model Pratt & Whitney turret lathe, w. f.	21 in. Gisholt.
2 in. Pratt & W. screw machine.	24 in. American.

#### HORIZONTAL BORING MILLS.

Niles, 2½ in. bar, 4 ft. table.

#### MILLERS.

No. 5 "B" Becker, vertical.	No. 6 Whitney hand miller.
No. 3 LeBlond, plain, all feeds.	No. 7 Becker, Lincoln.
No. 1 Cincinnati, plain.	No. 1½ LeBlond, plain.
No. 16 Garvin, plain.	36x42x8 Ingersoll slab miller, 3 in. spindle.
No. 1 Pratt & Whitney, power.	

#### SHAPERS.

16 in. Acme back gd. crank shaper.	18 in. Barker crank shaper.
16 in. Smith & Mills crank shaper.	22 in. Walcott.

#### GRINDERS.

LeBlond, cutter & reamer.	Gisholt, universal tool.
No. 22 Landis, plain, 12x22 in.	No. 2 Landis, universal tool.
No. 20 Landis, plain, 10x20 in.	No. 2 Partridge grinder.
18x96 in. Landis, plain.	

#### PUNCH PRESSES AND SHEARS.

No. 6 Walsh, open back, inclinable.	Drombacker hand lever splitting shear.
No. 30 "A" Perkins, open bk. inc.	22 in. Toledo power squaring shear.
No. 15 Buffalo ind. hand punch.	

#### MISCELLANEOUS.

Bolt cutter, 2½ in. National.	Hammer, 400-lb. American, steam.
Cutting-off machine, 4½ in. P. & W.	Pipe machine, 4 in. Bignall & K.
Drill, portable, No. 3 Dallett.	Saw table, Colburn.
Drill, portable, No. 4 Dallett.	Screw press, Bliss.
Hammer, 50 lb. Bliss, drop, with lifter.	Thread rolling machine, 2 in. Acme.

## SECOND-HAND MACHINERY

### FOR SALE BY

#### The Randle Machinery Co.,

1739 Powers St., Cincinnati, O.

#### BOILERS.

Horiz. tubular, from 6 to 150 h. p.

Fire box, from 8 to 80 h. p.

Vertical, from 3 to 50 h. p.

#### ENGINES.

Corliss, from 50 to 350 h. p.

Automatic, from 15 to 180 h. p.

Throttling, from 5 to 225 h. p.

#### LATHES.

60 in. Stevens, pulley.

15 in. x 6 ft. LeBlond screw cutting.

#### MISCELLANEOUS.

Heaters, tanks, pumps, exhausters, electrical, saw mill and general machinery.

Write for list. Also a full assortment of new machinery.

Sole manufacturers of the celebrated "Leader" Injectors and Jet Pumps.

#### ELECTRIC GENERATORS.

120 k. w., belted.

20 k. w., direct connected.

18 k. w., belted.

#### MOTORS.

All sizes and kinds.

#### PLANER.

36x36 Gray.

#### GAS OR GASOLINE ENGINES.

35 h. p., Auglaize.

25 h. p., Dean; small sizes also.

### FOR SALE BY

#### O. L. Packard Machinery Co.,

Milwaukee, Wis.

#### LATHES.

14x6 Hamilton, c. r., power cross fd., hollow spdle., a modern tool.....\$ 225.

16x8 Johnson, compound rest.....\$ 250.

28x12 American, 2 sets raising blocks.....\$ 250.

72x22 comp. rest, with raising blocks to swing 120 in.....\$ 1000.

15 in. turret lathe.....\$ 150.

#### PLANERS.

24x24x5, 2 heads on cross rail.....\$ 500. | 36x36x10.....\$ 700.

#### MISCELLANEOUS.

Bevel shear, Thomson, 2 in. boiler plate.....\$ 100.

Boring mill, 30 in. Bullard, full universal, 4 hole turret on spindle.....\$ 500.

Drill press, 24 in. Barnes, back gd., stationary hd., w. and l.....\$ 25.

Lathe, 15 in. Garvin Monitor.....\$ 250.

Pipe machine, No. 8 Merrell.....\$ 300.

Punch press, inclinable, No. 30 Perkins.....\$ 100.

Screw machine, 4 in. P. & W., automatic.....\$ 25.

Screw machine, 1 in. Drees, complete, has seen but very little wear.....\$ 250.

Shaper, 2 spindle, wood top, good order.....\$ 50.

Spinning lathe, 16x5.....\$ 40.

### FOR SALE BY

#### Frank Toomey, Inc.,

127 N. Third St., Philadelphia, Pa.

#### HAMMERS AND RADIAL DRILLS.

800 lb. Bement Miles & Co., single frame hammer, | 36 in. Morris radial drill,

#### LATHES.

12x5 Hende-Norton, tool room.

12x6 Hende-Norton, tool room.

14x6 Hende.

14x7 Lodge & S., geared head.

16x6 Prentice.

16x6 Davis, (3).

16x8 Bradford quick change gear.

48-72x14 Harrington extension bed gap lathe.

Foster & Kimball turret, (several).

#### MISCELLANEOUS.

Boring mill, 36 in. Bridgeport, sgl. hd.

Grinder, oscillating surface, Springfield No. 5.

Miller, full univ., No. 2 Cincinnati.

Miller, full univ., 20x7x17 int Oester.

Miller, slab, 36 in x 12 ft., heavy.

Miller, vertical, No. 22 Garvin.

Planer, 26x26x6 Niles

Planer, 33x33x12 Woodward & Powell.

Planer, 36x36x12 Sellers, 3 heads.

Press, PG-5 Ferracute.

Punch and shear, combination.

Sellers, 30 in. gap, capacity 1/2 in. hole in 1 1/2 in. material and shear 1/2 in.

Shaper, 14 in. Lodge & Davis.

Shaper, 20 in. Gould & E., back gd.

Shaper, 24 in. Queen City, back gd.

Shear, sgle. end, 50 in. gap, engine dr.

Turret lathes, No. 14 Garvin (2).





# Steel Equipment

## Stock Bins, Shelves, Racks, Lockers

Effect a big saving in floor space, cost of maintenance, expense of handling material and in insurance. The first cost is not much more than wood, and its advantages and subsequent economy are so great that in the long run—and not very long, either—the balance is decidedly in favor of steel. By the Terrell system, with the fixtures made in units, changes in the location of bins or shelves, in the sizes of compartments, or from bins to shelves or the reverse, are so quickly and easily made that the outfit adapts itself without additional cost or waste to varying needs. To change wooden fixtures in the same way would cost nearly as much as to build new ones complete.

If you are crowded for room, steel will give you 25 per cent more storage capacity in the same space; if your insurance rate is high, steel equipment will reduce it, besides decreasing your own fire risk; if you make frequent changes in your outfit, steel will pay for itself very quickly.

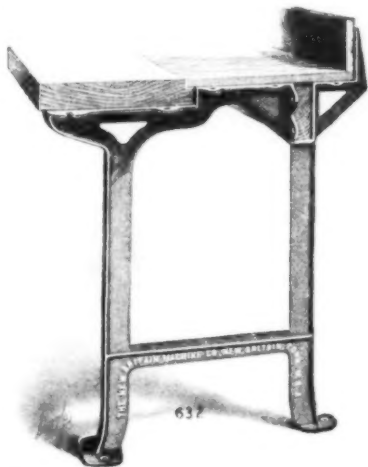
*Our experience is at your service. Glad to help you in planning new equipment or re-arranging old. You can't lose and you may gain by consulting us.*

## **Terrell's Equipment Co.**

Hall & Division Sts., Grand Rapids, Mich.

# Supreme Bench Economy

Is obtained by all users of the strong,  
long-wearing New Britain Grey Iron Legs



THEY SAVE 25 cents on every foot of benching installed; are independent of wall support; they come drilled and painted, ready to be set up; are easily moved about as new conditions demand.

*This "Bench Decision" rests with you. For complete evidence and brief, write to*

**The New Britain Machine Co.**

**60 Chestnut St., New Britain, Conn.**

Our line of Shop Furniture includes Steel and Smiths' Racks, Tool Stands, Lathe Pans, Stools, Iron Shelving, etc., etc.

